ORDER NO. SD81061929C8

Service Manual

FM/AM Stereo Cassette Receiver

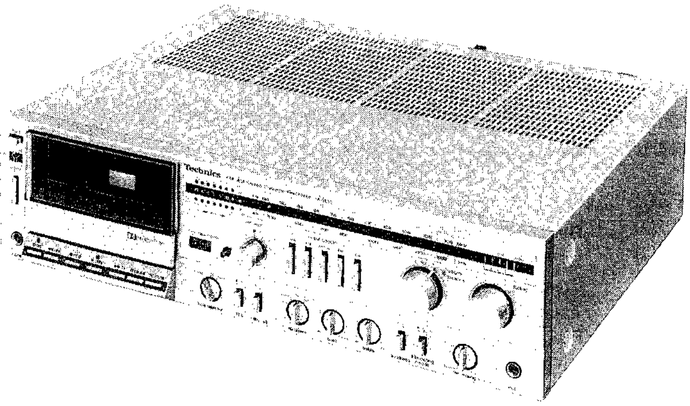
SA-R30

[EX], [XA], [EB]

SA-R30(K)

[EX], [XA]

DOLBY SYSTEM



Areas

- * [EX] is available in Switzerland and Scandinavia.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [EB] is available in Belgium.

***The cabinet and front panel are available in black color and silver types.**

***The black type model is provided with (K) in the Service Manual.**

*"Dolby" and the double-D symbol are trade marks at Dolby Laboratories.

*Noise reduction system manufactured under license from Dolby Laboratories.

Specifications

(Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

AMPLIFIERSECTION

30 Hz ∼ 20 kHz continuous power output	
both channels driven	2 x 30 W (4Ω)
	2 x 30 W (8Ω)
40 Hz ∼ 16 kHz continuous power output	
both channels driven	2 x 30 W (4Ω)
	2 x 30 W (8Ω)
1 kHz continuous power output	
both channels driven	2 x 37 W (4Ω)
	2 x 35 W (8Ω)
Total hormonic distortion	
rated power at 30 Hz ∼ 20 kHz	0.05% (8Ω), 0.08% (4Ω)
rated power at 40 Hz ∼ 16 kHz	0.05% (8Ω), 0.08% (4Ω)
rated power at 1 kHz	0.05% (8Ω), 0.05% (4Ω)
half power at 30 Hz ∼ 20 kHz	0.03% (8Ω)
half power at 1 kHz	0.02% (8Ω)
−26 dB power at 1 kHz	0.12% (4Ω)
50 mW power at 1 kHz	0.14% (4Ω)
Intermodulation distortion	
rated power at 250 Hz : 8 kHz = 4 : 1, 4Ω	0.08%
rated power at 60 Hz : 7 kHz = 4 : 1, SMPTE, 8Ω	0.05%
Power bandwidth	
both channels driven, −3 dB	5 Hz ∼ 30 kHz (4Ω)

Damping factor	15 (4Ω), 30 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47 kΩ
AUX	150 mV/47 kΩ
MIC	2.0 mV/22 kΩ
PHONO maximum input voltage (1 kHz, RMS)	120 mV
S/N	
rated power (4Ω)	
PHONO	70 dB (IHF, A : 78 dB)
AUX	82 dB (IHF, A : 90 dB)
MIC	67 dB (IHF, A : 76 dB)
−26 dB power (4Ω)	
PHONO	64 dB
AUX	66 dB
MIC	64 dB
50 mW power (4Ω)	
PHONO	62 dB
AUX	62 dB
MIC	62 dB
Frequency response	
PHONO	RIAA standard curve
	± 1.0 dB (30 Hz ∼ 15 kHz)
AUX	10 Hz ∼ 60 kHz (−3 dB)
	20 Hz ∼ 20 kHz (± 0.8 dB)
MIC	20 Hz ∼ 20 kHz (± 1.5 dB)

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Tone controls	
BASS	50 Hz, +10 dB ∼ −10 dB
TREBLE	20 kHz, +10 dB ∼ −10 dB
Loudness control (Volume at −30 dB)	50 Hz, +9 dB
Output voltage and impedance	
REC OUT	150 mV
Channel balance, AUX 250 Hz ∼ 6,300 Hz	± 1.5 dB
Channel separation, AUX 1 kHz	50 dB
Headphones output level and impedance	380 mV/330Ω
Load impedance	
MAIN or REMOTE	4 ∼ 16Ω
MAIN and REMOTE	8 ∼ 16Ω

FM TUNER SECTION

Frequency range	88 ∼ 108 MHz
Sensitivity	
S/N 30 dB	1.9μV (300Ω), 1.3μV (75Ω)
S/N 26 dB	1.7μV (300Ω), 1.2μV (75Ω)
S/N 20 dB	1.5μV (300Ω), 0.9μV (75Ω)
IHF usable sensitivity	1.9μV (IHF '58)
IHF 46 dB stereo quieting sensitivity	25μV/75Ω
Total harmonic distortion at 1 kHz	
MONO	0.15%
STEREO	0.30%
S/N	
MONO	60 dB (75 dB, IHF)
STEREO	56 dB (70 dB, IHF)
Frequency response	20 Hz ∼ 15 kHz, +0.5 dB ∼ −1.5 dB
Alternate channel selectivity	60 dB
Capture ratio	1.5 dB
Image rejection at 98 MHz	50 dB
IF rejection at 98 MHz	70 dB
Spurious response rejection at 98 MHz	80 dB
AM suppression	55 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Carrier leak	
19 kHz	−30 dB (−35 dB, IHF)
38 kHz	−45 dB (−50 dB, IHF)
Channel balance (250Hz ∼ 6,300 Hz)	± 2.0 dB
Limiting point	1.2μV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	800 kHz
Antenna terminals	300Ω (balanced) 75Ω (unbalanced)

AM TUNER SECTION

Frequency range	525 ∼ 1605 kHz
Sensitivity (S/N 20 dB)	30μV, 300μV/m
Selectivity	30 dB
Image rejection at 1000 kHz	45 dB
IF rejection at 1000 kHz	40 dB

CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Hands	
RED/PLAY	SP (solid permalloy) head
Erasing	3-gap ferrite head
Motors	Electronically controlled DC motor DC motor for real drive
Recording system	AC bias
Bias frequency	85 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec.
Frequency response	
METAL	20 Hz ∼ 17 kHz 30 Hz ∼ 16 kHz (DIN)
CrO_2	20 Hz ∼ 16 kHz 30 Hz ∼ 16 kHz (DIN)
NORMAL	20 Hz ∼ 15 kHz 30 Hz ∼ 15 kHz (DIN)
S/N	(signal level = max recording level, CrO_2 type tape)
DOLBY NR in	66 dB (above 5 kHz)
DOLBY NR out	56 dB
Wow and flutter	0.05% (WRMS) ± 0.14% (DIN)
Fast Forward and Rewind Time	Approx. 90 seconde with C-60 cassette tape

GENERAL

Power consumption	290 W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W x H x D)	430 x 118 x 360 mm (16-15/16" x 4-11/16" x 14-3/16")
Weight	9.5 kg (20.9 lb.)

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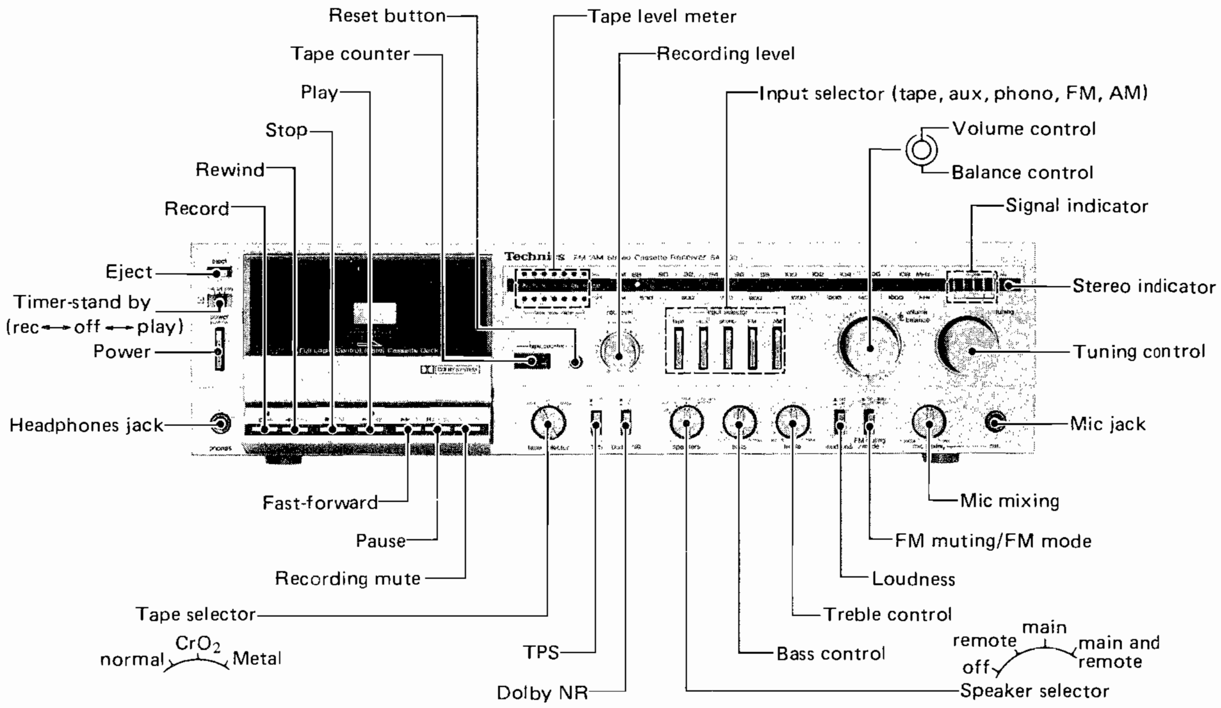
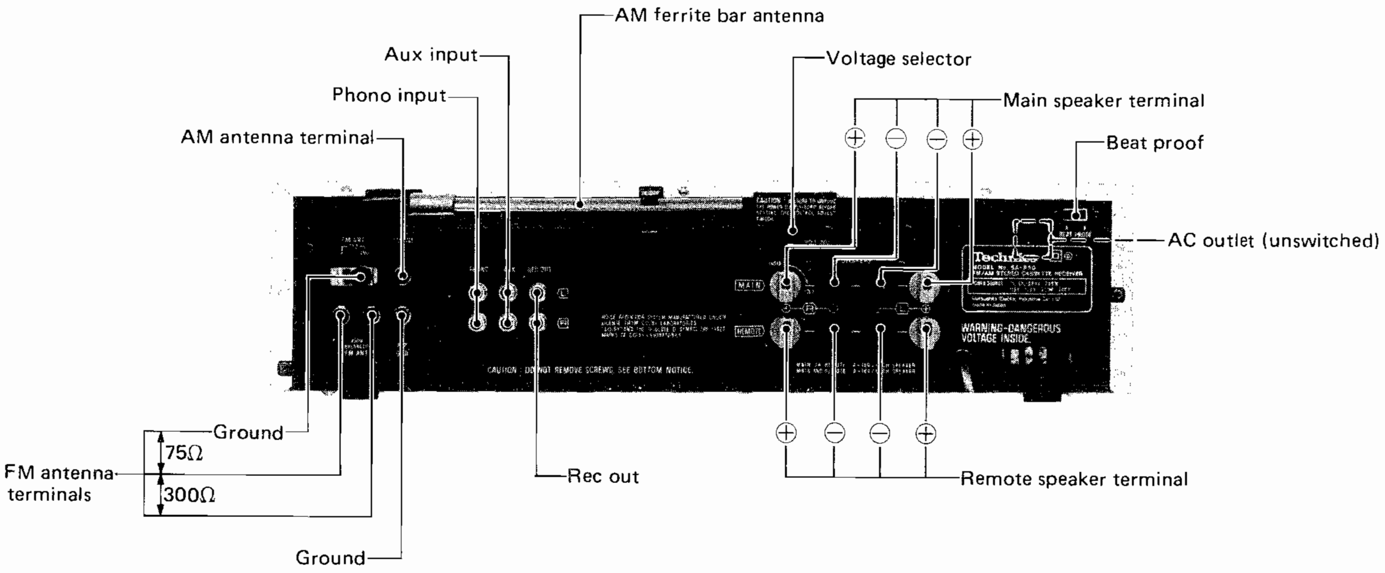
■ LOCATION OF CONTROLS


Reset button
Tape counter
Play
Stop
Rewind
Record
Eject
Timer-stand by
(rec ← off → play)
Power
Headphones jack
Fast-forward
Pause
Recording mute
Tape selector
normal
CrO2
Metal
TPS
Dolby NR
Tape level meter
Recording level
Input selector (tape, aux, phono, FM, AM)
Volume control
Balance control
Signal indicator
Stereo indicator
Tuning control
Mic jack
Mic mixing
FM muting/FM mode
Loudness
Treble control
Bass control
main
remote
main and remote
off
Speaker selector


AM ferrite bar antenna
Aux input
Phono input
AM antenna terminal
Voltage selector
Main speaker terminal
Beat proof
AC outlet (unswitched)
Ground
75Ω
FM antenna terminals
300Ω
Ground
Rec out
Remote speaker terminal

AC outlets is not equipped on units some areas.

■ DISASSEMBLY INSTRUCTIONS

• How to remove the cabinet

1. Remove the 10 setscrews (Fig. 1: ①, ② and ③ ~ ⑦) of the cabinet.
2. Remove the cabinet.

• How to remove the bottom board

1. Remove the 11 setscrews (Fig. 2: ⑧ ~ ⑱) of the bottom board.
2. Remove the bottom board.

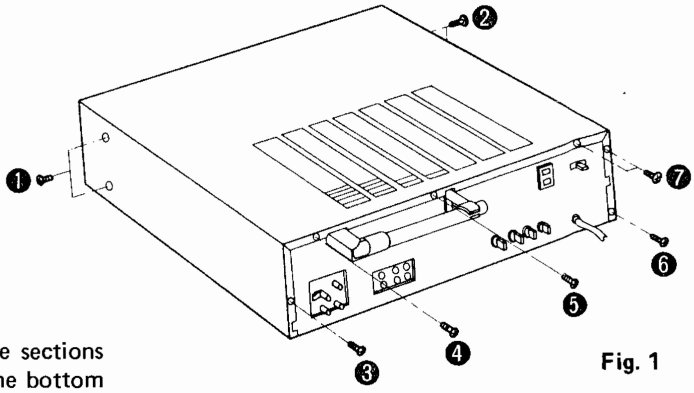


Fig. 1

• How to remove the cassette deck

1. Remove the cabinet and bottom board. (Refer to the sections "How to remove the cabinet" and "How to remove the bottom board".)
2. Push eject button to open the cassette lid ①.
3. Remove cassette lid ① by lifting it up from cassette lid ②. (See Fig. 3.)
4. Remove the 5 knobs (Fig. 4: ⑲ ~ ㉓) of the front panel.
   Note: When removing the balance knob ㉒, set a string over the knob and pull the string.
5. Remove the 6 setscrews (Fig. 2, 4: ㉔ ~ ㉙) of the front panel.
6. Push up the tape control switch in the direction of the arrow Ⓐ (Fig. 4: Ⓐ) and draw the front panel in the direction of the arrow Ⓑ (Fig. 4: Ⓑ).
   (Take care not to scratch each knob.)
7. Remove the 1 setscrew (Photo 1: ㉚) of the timer-stand by switch and the 4 setscrews (Photo 1: ㉛ ~ ㉞) of the cassette deck.
8. Remove the 2 setscrew (Photo 2: ㉟, ㊱) of the chassis.
9. Remove the 2 setscrews used to secure the logic control printed circuit and the chassis, 4 connectors and 4 lead clampers (Photo 2: ㊲ ~ ㊻) and then remove the cassette deck.
10. The parts can be set up by reversing the above procedure. Arrange the lead wires by using the lead clamp. In their original position and make sure they are not caught between the cassette deck and chassis before tightening the setscrews.

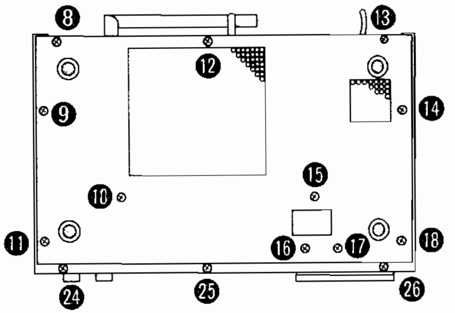


Fig. 2

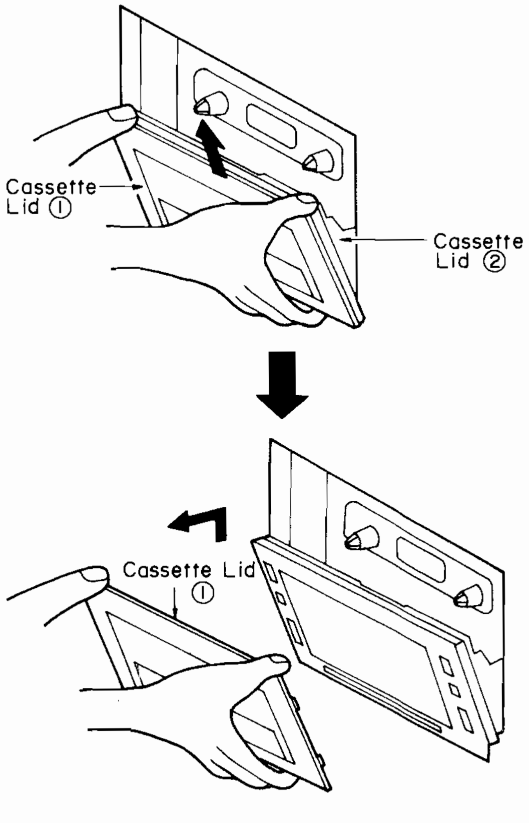


Fig. 3

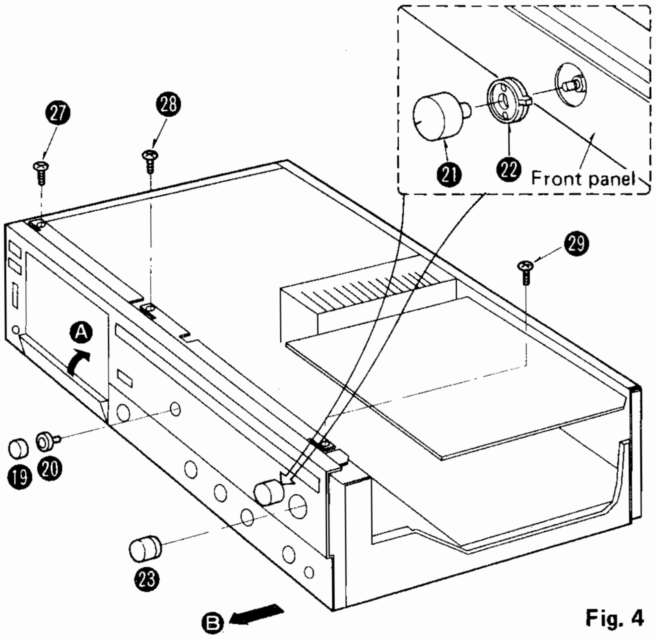


Fig. 4

Note: Adjust the clearance between the tape counter's magnet and Hall IC to 1 mm ~ 2 mm as shown in Fig. 5.

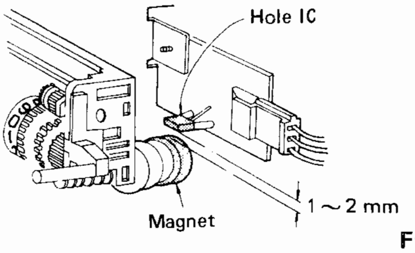

Hole IC
Magnet
1 ~ 2 mm

Fig. 5

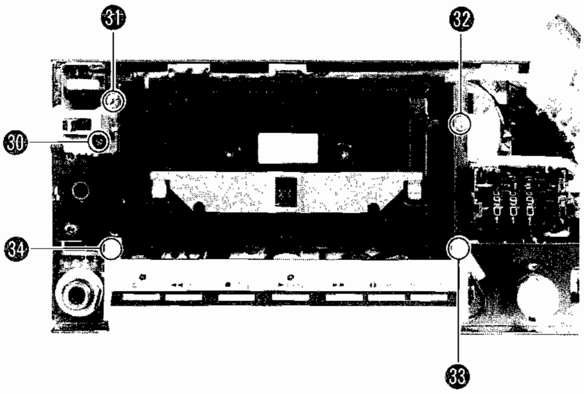


Photo 1

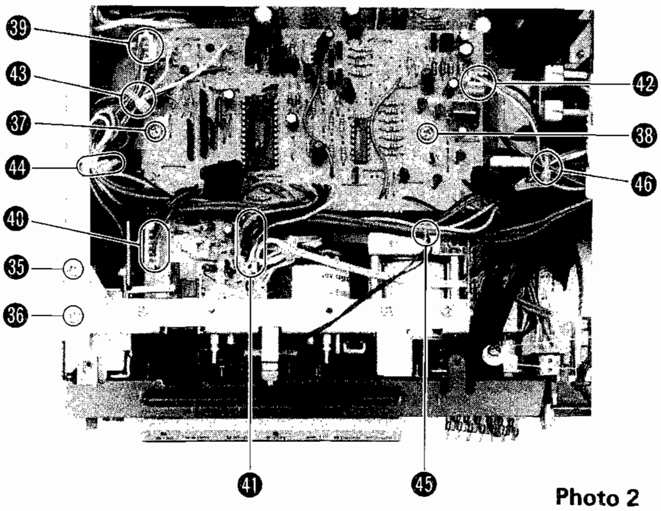

㊴
㊸
㊲
㊹
㊵
㉟
㊱
㊷
㊳
㊻
㊶
㊺

Photo 2

● How to remove the power IC

1. Remove the cabinet and bottom board. (Refer to the sections "How to remove the cabinet" and "How to remove the bottom board.")
2. Unsolder the power IC.
3. Remove the 2 setscrews (Fig. 6: ㊼) of the rear panel.
4. Remove the 2 setscrews (Fig. 7: ㊽) of the bottom chassis.
5. Move the heat-sink in the direction of the arrow Ⓒ in Fig. 7.
6. Remove the 2 setscrews (Fig. 7: ㊾) of the power IC.
7. When mounting the power IC, apply silicone compound (or equivalent heat diffuser) to the rear side of power IC, and then follow the steps 1 ~ 5 reversely.

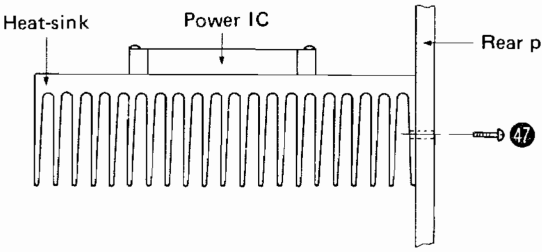

Heat-sink
Power IC
Rear panel
㊼

Fig. 6

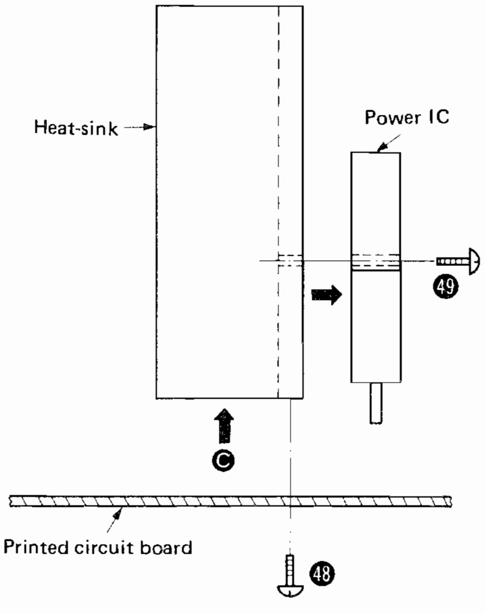
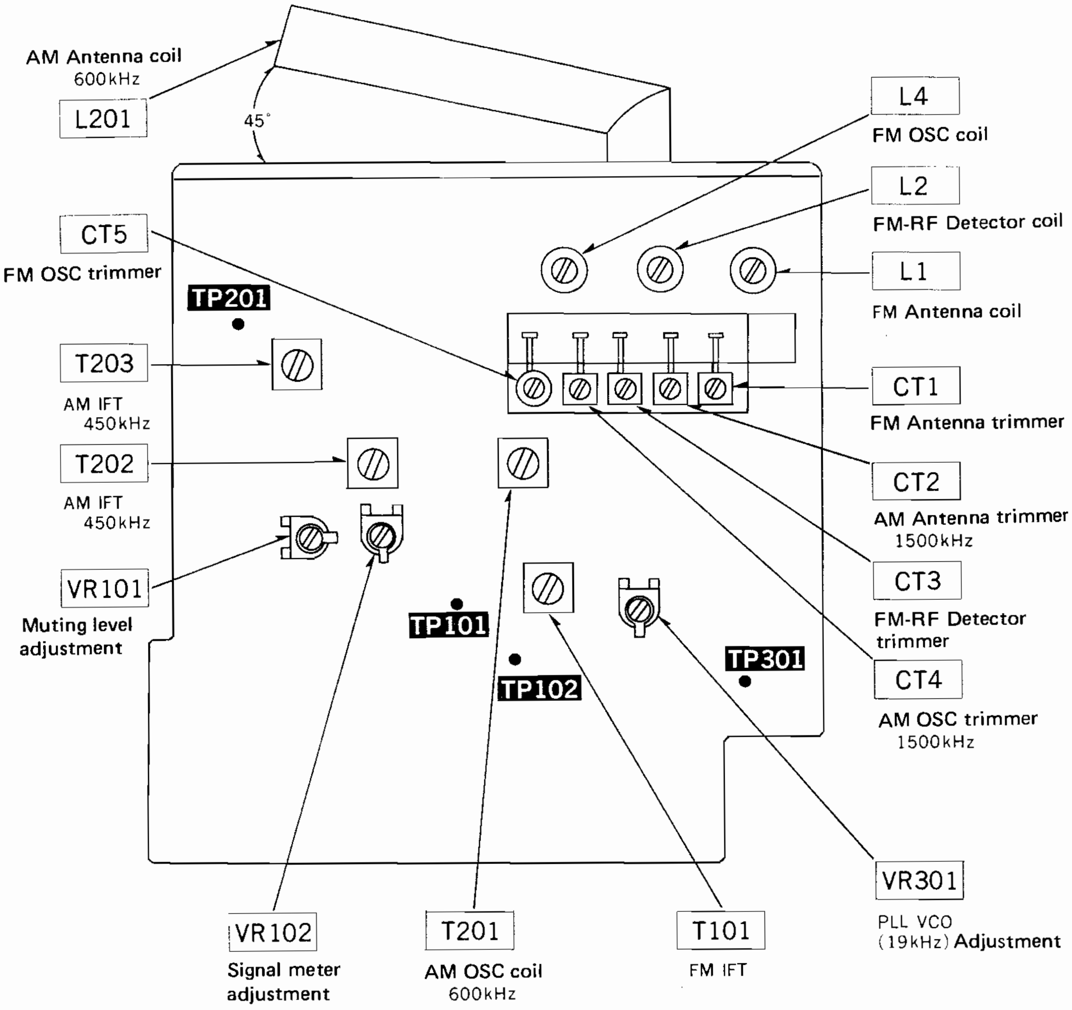
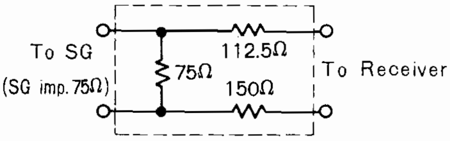

Heat-sink
Power IC
㊾
Ⓒ
Printed circuit board
㊽

Fig. 7

■ MEASUREMENTS AND ADJUSTMENTS

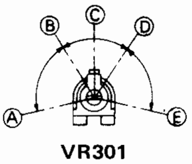
RADIO


AM Antenna coil
600kHz
L201
45°
CT5
FM OSC trimmer
TP201
T203
AM IFT
450kHz
T202
AM IFT
450kHz
VR101
Muting level adjustment
TP101
TP102
TP301
L4
FM OSC coil
L2
FM-RF Detector coil
L1
FM Antenna coil
CT1
FM Antenna trimmer
CT2
AM Antenna trimmer
1500kHz
CT3
FM-RF Detector trimmer
CT4
AM OSC trimmer
1500kHz
VR301
PLL VCO
(19kHz) Adjustment
VR102
Signal meter adjustment
T201
AM OSC coil
600kHz
T101
FM IFT


To SG
(SG imp. 75Ω)
75Ω
112.5Ω
150Ω
To Receiver

300Ω FM Dummy Antenna

Fig. 8



A–B,D–E: Stereo OFF Position.
B–D: Stereo ON Position (Indicator Lighting).
C: Adjust Point of MPX Circuit.

Fig. 10

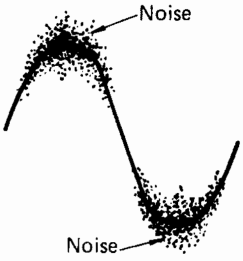

Noise
Noise

Fig. 9

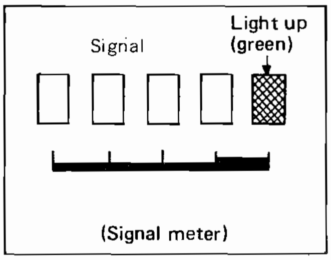

Signal
Light up
(green)
(Signal meter)

Fig. 11

Setting and Equipment used

1. AC and DC electronic voltmeters (VTVM).
2. AM signal generator (AM-SG).
3. FM signal generator (FM-SG).
4. Oscilloscope
5. Frequency counter (19 kHz and 108 MHz measurable).
6. Input selector switch .... { AM (AM adjustment)
FM (FM adjustment)
7. FM muting & FM mode switch .... off/FM mono
8. Set speaker selector to "main and remote"
9. Maintain line voltage at 120 volts.
10. 300Ω FM dummy antenna ..... Refer to Fig. 8.
11. Output of signal generator should be no higher than necessary to obtain an output reading.
12. Adjust the antenna coil (L201) position by using a screwdriver so that it is at approximately 45 degrees to the rear panel.

Preparation of FM signal generator (FM-SG)

1. Connect stereo modulator to FM-SG
2. Apply SG output to antenna terminal of the set through 300Ω FM dummy antenna.
3. The standard input of the set is 60 dB (1mV), 400 Hz 100% modulation (Because of using dummy antenna, SG output must be 12 dB plus (IHF). That is, when input is 60 dB, SG output is to be 72 dB).

Step No.	AM/FM SIGNAL GENERATOR		DIAL SETTING	PREPARATIONS	PARTS ADJUSTMENT	ADJUSTING PROCEDURE
	CONNECTION	FREQUENCY				
	AM-IF ADJUSTMENT					
1	Connect AM-SG to FM antenna terminal through 200pF capacitor. Common to chassis. (Powerful input)	450 kHz (30% Mod. with 400 Hz)	Point of non-inter-ference	Connect AC VTVM or scope to "Speaker terminal".	T202 (1st IFT) T203 (2nd IFT)	* Adjust the input frequency and adjustment points so that the output becomes maximum.
	AM-RF ADJUSTMENT					
2	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Weak input)	600 kHz (30% Mod. with 400 Hz)	600 kHz	Connect AC VTVM or scope to "Speaker terminal".	T201 (AM OSC Coil) L201 (AM ANT Coil)	* Adjust for maximum output. Adjust L201 by moving coil bobbin along ferrite core.
3		1500 kHz (30% Mod. with 400 Hz)	1500 kHz	Connect AC VTVM or scope to "Speaker terminal".	CT4 (AM OSC Trimmer) CT2 (AM ANT Trimmer)	1. Adjust for maximum output. 2. Repeat steps (2) and (3).
	FM-IF ADJUSTMENT					
4	————	No Signal	Point of non-inter-ference	Connect DC VTVM between TP101 and TP102 through check coil.	T101 (Discri. IFT)	* Adjust T101 core so that voltage measured in signal mode is 0V in 100mV range.
	FM-RF ADJUSTMENT					
5	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna.	90 MHz (100% Mod. with 400 Hz) weak input.	90 MHz	Connect scope to "Speaker terminal".	L4 (OSC Coil) L2 (RF DET Coil) L1 (ANT Coil)	1. Add weak input so that noise is included in the output wave from. 2. Make the adjustment so that the output wave form is vertically symmetrical. (Fig. 9) 3. Repeat the steps (5) and (6) until the frequency correctly matches the dial scale.
6		106 MHz (100% Mod. with 400 Hz) weak input	106 MHz	Connect scope to "Speaker terminal".	CT5 (OSC Trimmer) CT3 (DET Trimmer) CT1 (ANT Trimmer)	

FM MPX V.C.O. ADJUSTMENT

Step No.	USING A FREQUENCY COUNTER	USING ALTERNATE SYSTEM
7	1. 100 MHz 60 dB Non-modulated mono signal applied to set. 2. FM muting/ FM mode switch to "on/FM auto". 3. Connect frequency counter to TP301 through resistor (100kΩ). 4. Adjust **VR301** to 19 kHz ± 30 Hz.	1. Apply stereo signal from generator or stereo station to tuner. 2. Adjust **VR301** until stereo indicator lights up. Cement arm of **VR301** as shown in Fig. 10.

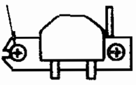
Step No.	AM/FM SIGNAL GENERATOR		DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
	FM MUTING LEVEL ADJUSTMENT					
8	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Pilot 10% Mod. stereo signal)	100 kHz (90% Mod. with 1 kHz) weak input	100.0 MHz	————	VR101 (Muting level)	1. Set the FM muting/FM mode switch to "on/FM auto". 2. First rotate VR101 anticlockwise, and then slowly clockwise so that the stereo indicator lights up.
	SIGNAL METER LEVEL ADJUSTMENT					
9	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Apply 48 dB to antenna terminal)	83.0 MHz (100% Mod. with 400 Hz) weak input	100.0 MHz	Signal meter	VR102 (Signal metter level)	1. Add weak input so that noise is included in the output wave form. 2. Adjust VR102 while observing the signal meter LED so that the indicator at 5 th is about to turn on. (Fig. 11)

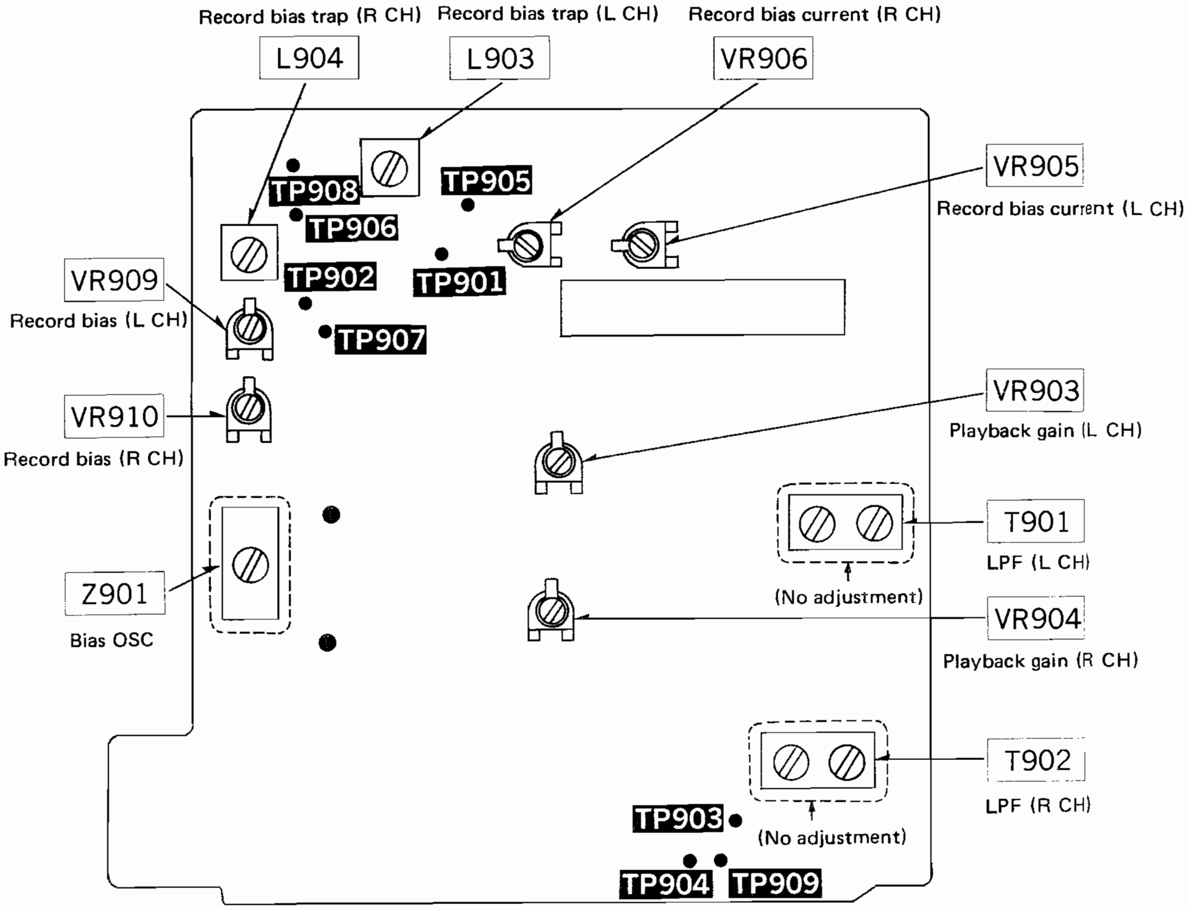
CASSETTE TAPE DECK ADJUSTMENT

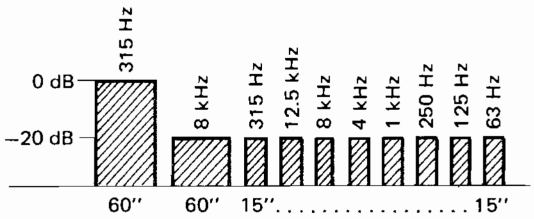
* **Equipment used**
1. AC electronic voltmeter (VTVM)
2. Oscilloscope
3. Frequency counter
4. AF oscillator
5. Metal tape

* **Test tape**
QZZCFM (Fig. 12)

* **Setting**
1. Sound volume . . . . .0 (minimum)
2. Balance control . . . . .0 (center)
3. Bass control . . . . .0 (center)
4. Treble control . . . . .0 (center)
5. Mic mixing control . . . . . . .center
6. Input selector . . . . .cassette
7. Beat proof . . . . .A
8. Dolby NR . . . . .out
9. Tape selector . . . . .normal (Normal position if not specified.)
10. Timer stand-by switch . . . . .off
11. TPS switch. . . . . .off
12. Recording level control. . . . .10 (maximum)

No.	ADJUSTMENTS	AC VTVM CONNECTION	PARTS ADJUSTED	ADJUSTING PROCEDURE
1	Head azimuth	(L channel) Connect between TP903 and TP909.	Record/playback head angle adjustment screw. **Azimuth adjustment** 	1. Playback the 8 kHz frequency characteristic test tape (QZZCFM). 2. Adjust record/playback head angle adjustment screw. So that output level at LINE OUT becomes maximum. 3. Measure both channels and adjust levels for equal output. 4. After adjustment lock head adjustment screw with lacquer. **Level difference of left and right channel : Less than 2 dB.**
		(R channel) Connect between TP904 and TP909.		
2	Playback gain	(L channel) Connect between TP903 and TP909.	VR903	1. Playback the 315 Hz frequency characteristic test tape (QZZCFM). Then adjust VR903 and VR904 so that the output becomes 580 mV.
		(R channel) Connect between TP904 and TP909.	VR904	
3	Bias OSC	Connect frequency counter between TP910 and TP911.	Z901	Adjust Z901 to 83 kHz ± 1 kHz.
4	Record bias trap	(L channel) Connect between TP905 and TP908.	L903	1. Set the tape selector switch to "metal" position. 2. Shift the unit into recording mode. 3. Adjust L903 and L904 for minimum indication on VTVM.
		(R channel) Connect between TP906 and TP908.	L904	
5	Record bias	(L channel) Connect between TP901 and TP907.	VR909 (L channel)	1. Set the tape selector switch to "CrO2" position. 2. Shift the unit into recording mode. 3. Adjust VR909 and VR910 for 5.6 mV reading on VTVM. **Standard value:** **7.0 ± 0.8 mV (Metal tape position),** **3.2 ± 0.4 mV (Normal tape position).**
		(R channel) Connect between TP902 and TP907.	VR910 (R channel)	
6	Record bias current	(L channel) Connect between TP903 and TP909.	———	1. Set the input selector switch to "aux" position. 2. Shift the unit into recording mode. 3. Apply 315 Hz signal to aux input terminal by oscillator, and adjust by oscillator and REC level volume so that VTVM is 410 mV.
		(R channel) Connect between TP904 and TP909.		
		(L channel) Connect between TP905 and TP908.	VR905	1. Adjust VR905 and VR910 for 0.85V reading on VTVM.
		(R channel) Connect between TP906 and TP908.	VR906	


Record bias trap (R CH)
L904
Record bias trap (L CH)
L903
Record bias current (R CH)
VR906
VR905
Record bias current (L CH)
TP908
TP905
TP906
TP902
TP901
TP907
VR909
Record bias (L CH)
VR910
Record bias (R CH)
VR903
Playback gain (L CH)
T901
LPF (L CH)
(No adjustment)
Z901
Bias OSC
VR904
Playback gain (R CH)
T902
LPF (R CH)
TP903
(No adjustment)
TP904
TP909

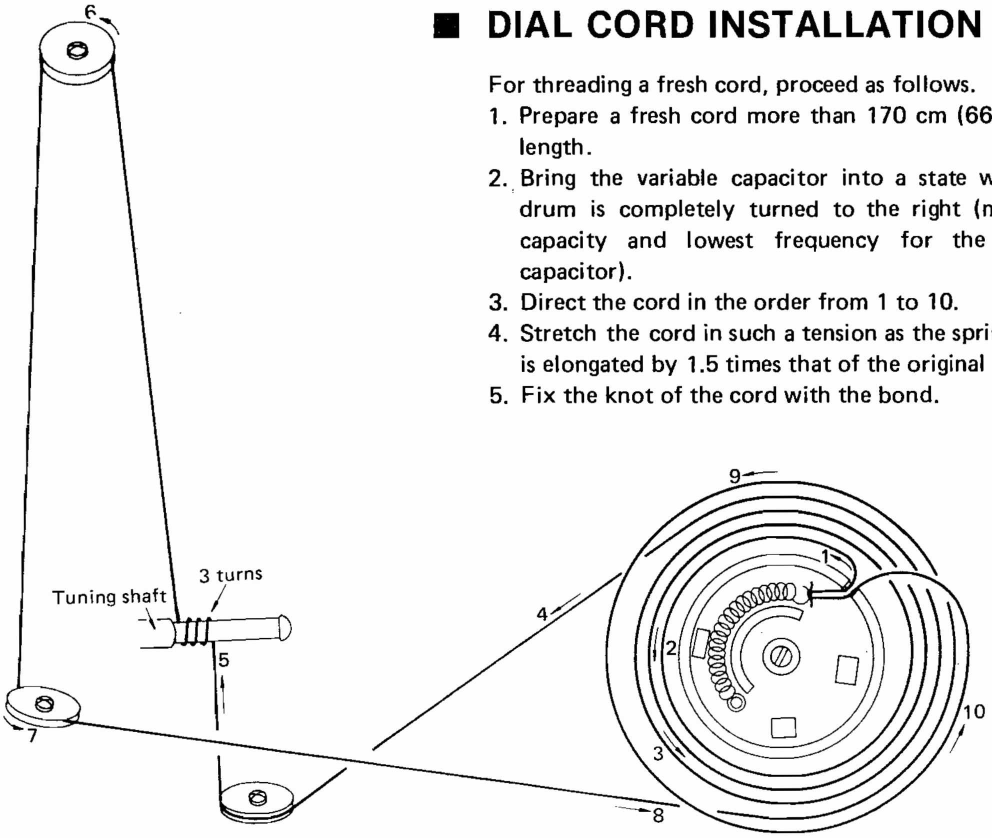
Frequency level	Constructions
315 Hz . . . . 0 dB 8 kHz. . . . . −20 dB 12.5 kHz ~ 63 Hz. . . . . −20 dB Time constant . . . . 120μS, 3180μS Rec time . . . . 4 min	

QZZCFM
Fig. 12

■ DIAL CORD INSTALLATION GUIDE

For threading a fresh cord, proceed as follows.

1. Prepare a fresh cord more than 170 cm (66-7/8") in length.
2. Bring the variable capacitor into a state where the drum is completely turned to the right (maximum capacity and lowest frequency for the variable capacitor).
3. Direct the cord in the order from 1 to 10.
4. Stretch the cord in such a tension as the spring length is elongated by 1.5 times that of the original state.
5. Fix the knot of the cord with the bond.

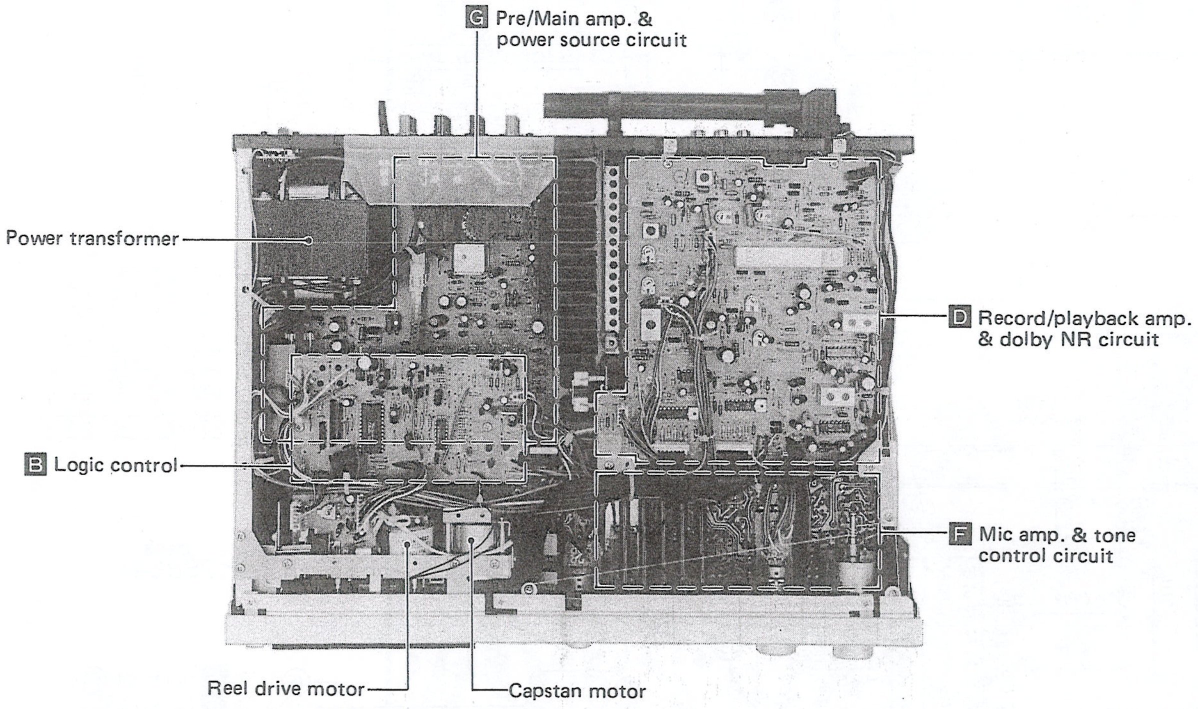


■ TERMINALS AND OPERATION OF CASSETTE DECK LOGIC CONTROL IC AN6251 (IC801)

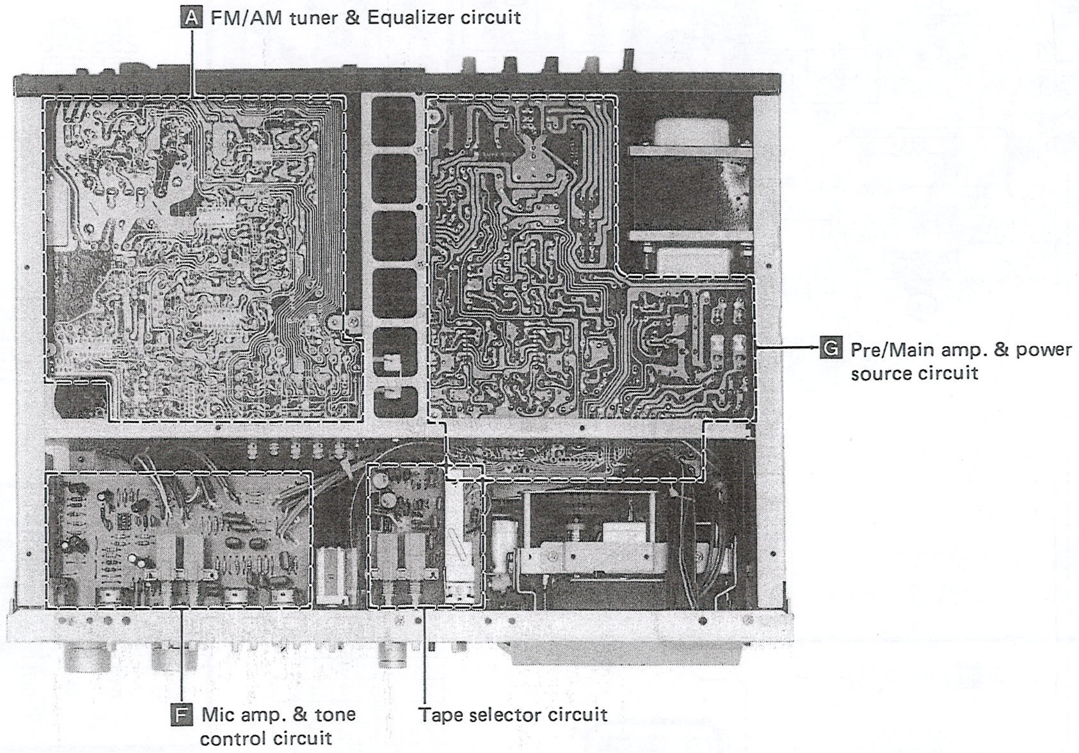
Terminal	Mark	Operation	Level during	Terminal	Mark	Operation	Level during
1	GND	Earth	0V	13	PLY OUT	Playback mode output	L
2	REW IN	Rewind instruction input	L	14	REC OUT	Record mode output	L
3	FF IN	FF instruction input	L	15	CAP OUT	Capstan rotating direction output	Forward direction : H Reverse direction : L
4	EBR IN	Electric brake reset input	L	16	CR2	D-PLY time constant	——
5	CRI	Reset input with power ON	L	17	D-PLY OUT	Playback operation output	L
6	STP IN	Stop instruction input	L	18	BRK OUT	Brake releasing output	L
7	REV IN	Reverse playback instruction input	L	19	STP OUT	Stop mode output	L
8	FED IN	Forward playback instruction input	L	20	TMS OUT	Timer start output	L
9	PAS IN	Pause instruction input	L	21	CR3	Timer start time constant	——
10	REC IN	Record instruction input	L	22	FF OUT	FF mode output	L
11	REC INH	Record inhibiting instruction input	L	23	REW OUT	Rewind mode output	L
12	PAS OUT	Pause mode output	L	24	Vcc	Power supply terminal	5.2V

■ PRINTED CIRCUIT BOARDS LOCATION

Top View

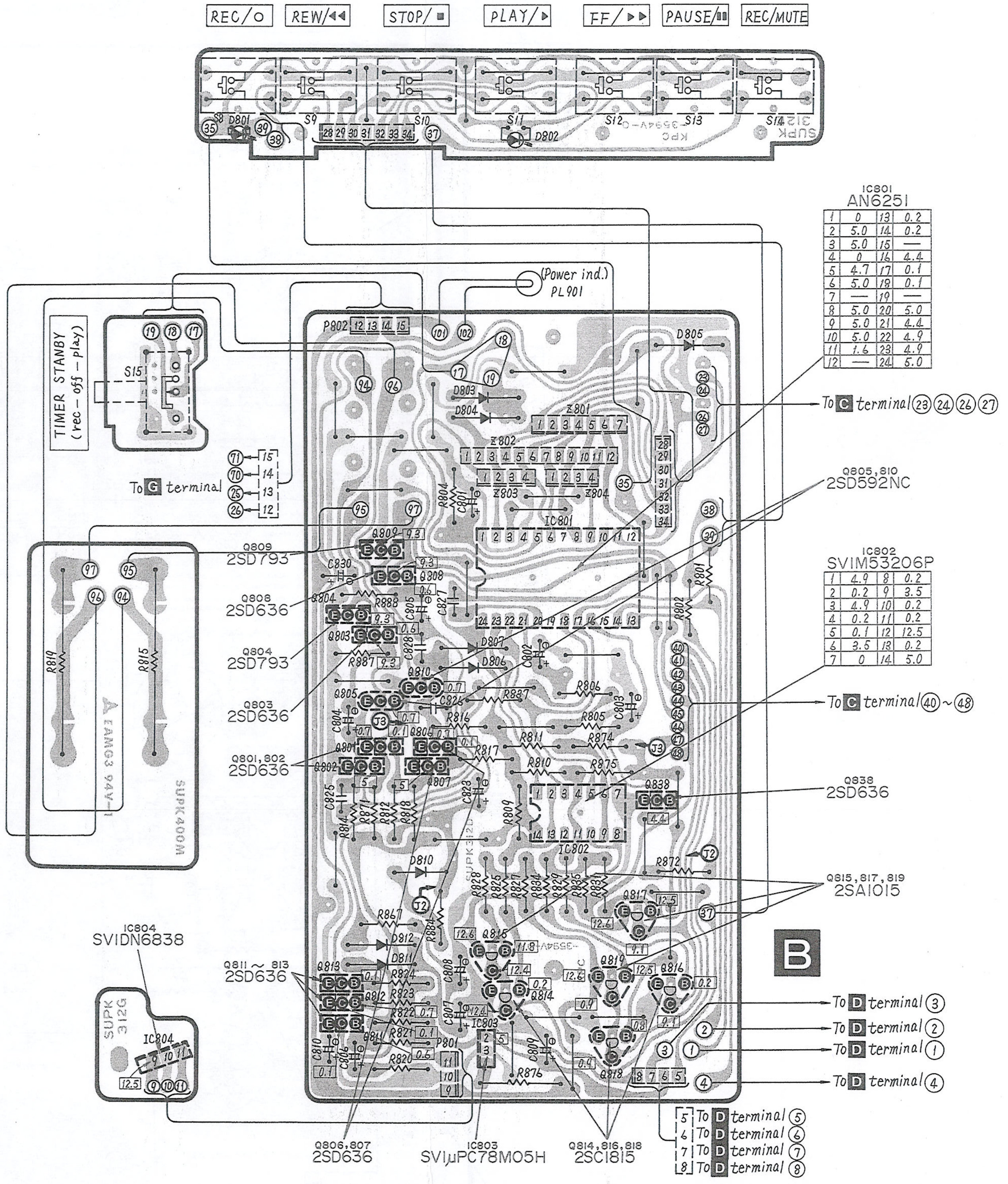

G Pre/Main amp. & power source circuit
Power transformer
D Record/playback amp. & dolby NR circuit
B Logic control
F Mic amp. & tone control circuit
Reel drive motor
Capstan motor

Bottom View


A FM/AM tuner & Equalizer circuit
G Pre/Main amp. & power source circuit
F Mic amp. & tone control circuit
Tape selector circuit

■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

▨ Ground (Earth) lines


REC/○
REW/◀◀
STOP/■
PLAY/▶
FF/▶▶
PAUSE/▮▮
REC/MUTE
S9
S10
S11
S12
S13
S14
D801
D802
SUPK 312S
(Power ind.) PL901
TIMER STANBY (rec – off – play)
S151
To G terminal
P802
D803
D804
D805
Z801
Z802
Z803
Z804
IC801
To C terminal ㉓㉔㉖㉗
Q805, 810 2SD592NC
Q809 2SD793
Q808 2SD636
Q804 2SD793
Q803 2SD636
Q801, 802 2SD636
EAMG3 94V-1
SUPK400M
To C terminal ㊵~㊽
Q838 2SD636
IC802
Q815, 817, 819 2SA1015
B
IC804 SVIDN6838
SUPK 312G
Q811 ~ 813 2SD636
To D terminal ③
To D terminal ②
To D terminal ①
To D terminal ④
5 To D terminal ⑤
4 To D terminal ⑥
7 To D terminal ⑦
8 To D terminal ⑧
Q806, 807 2SD636
IC803 SVIμPC78M05H
Q814, 816, 818 2SC1815

IC801
AN6251

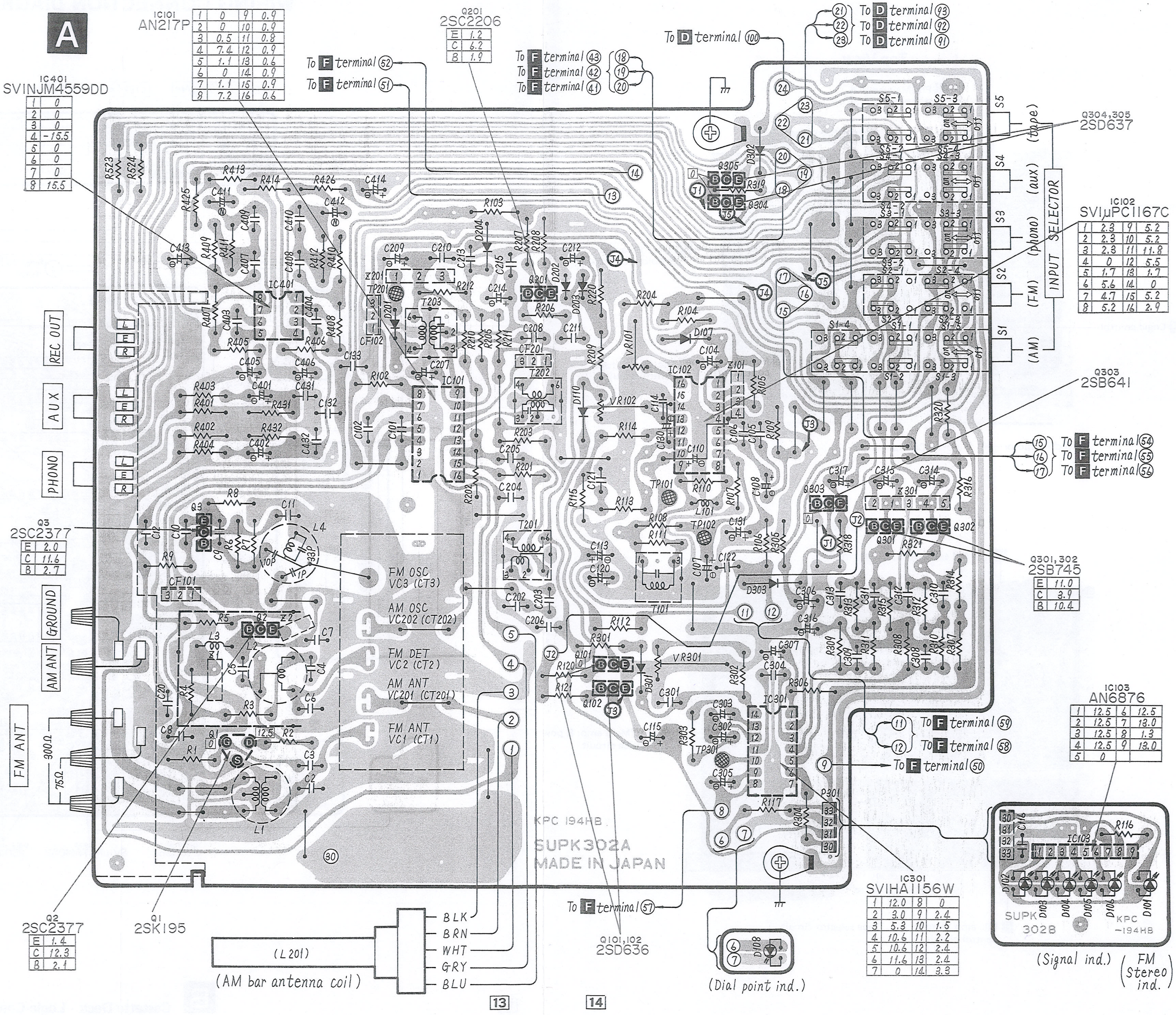
1	0	13	0.2
2	5.0	14	0.2
3	5.0	15	—
4	0	16	4.4
5	4.7	17	0.1
6	5.0	18	0.1
7	—	19	—
8	5.0	20	5.0
9	5.0	21	4.4
10	5.0	22	4.9
11	1.6	23	4.9
12	—	24	5.0

IC802
SVIM53206P

1	4.9	8	0.2
2	0.2	9	3.5
3	4.9	10	0.2
4	0.2	11	0.2
5	0.1	12	12.5
6	3.5	13	0.2
7	0	14	5.0

B Cassette Deck · Logic Control Circuit

A Tuner Circuit


A
REC OUT
AUX
PHONO
GROUND
AM ANT
FM ANT
300Ω
75Ω
To F terminal (52)
To F terminal (51)
To F terminal (43)
To F terminal (42)
To F terminal (41)
To D terminal (100)
To D terminal (93)
To D terminal (92)
To D terminal (91)
Q304,305 2SD637
INPUT SELECTOR
(tape)
(aux)
(phono)
(FM)
(AM)
Q303 2SB641
To F terminal (54)
To F terminal (55)
To F terminal (56)
FM OSC VC3 (CT3)
AM OSC VC202 (CT202)
FM DET VC2 (CT2)
AM ANT VC201 (CT201)
FM ANT VC1 (CT1)
KPC 194HB
SUPK302A
MADE IN JAPAN
To F terminal (59)
To F terminal (58)
To F terminal (50)
To F terminal (57)
Q1 2SK195
Q101,102 2SD636
BLK
BRN
WHT
GRY
BLU
(L201)
(AM bar antenna coil)
(Dial point ind.)
SUPK 302B
KPC -194HB
(Signal ind.)
(FM Stereo ind.)

IC401 SVINJM4559DD

1	0
2	0
3	0
4	-15.5
5	0
6	0
7	0
8	15.5

IC101 AN217P

1	0	9	0.9
2	0	10	0.9
3	0.5	11	0.8
4	7.4	12	0.9
5	1.1	13	0.6
6	0	14	0.9
7	1.1	15	0.9
8	7.2	16	0.6

Q201 2SC2206

E	1.2
C	6.2
B	1.9

IC102 SVIμPC1167C

1	2.3	9	5.2
2	2.3	10	5.2
3	2.3	11	11.8
4	0	12	5.5
5	1.7	13	1.7
6	5.6	14	0
7	4.7	15	5.2
8	5.2	16	2.9

Q3 2SC2377

E	2.0
C	11.6
B	2.7

Q301,302 2SB745

E	11.0
C	3.9
B	10.4

IC103 AN6876

1	12.5	6	12.5
2	12.5	7	13.0
3	12.5	8	1.3
4	12.5	9	13.0
5	0		

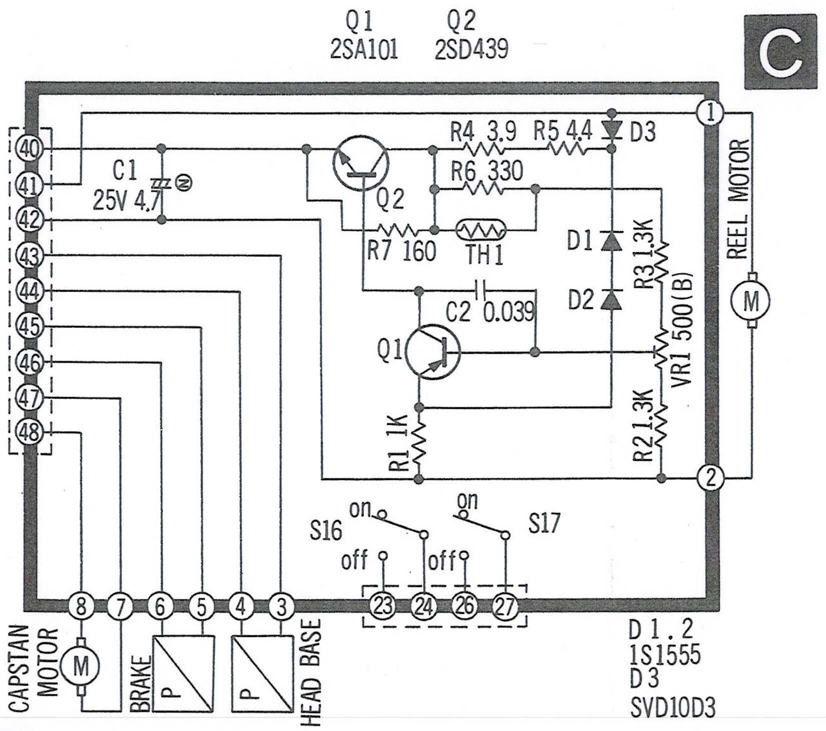
Q2 2SC2377

E	1.4
C	12.3
B	2.1

IC301 SVIHA1156W

1	12.0	8	0
2	3.0	9	2.4
3	5.3	10	1.5
4	10.6	11	2.2
5	10.6	12	2.4
6	11.6	13	2.4
7	0	14	3.3

● Schematic diagram (Cassette tape deck motor control circuit)

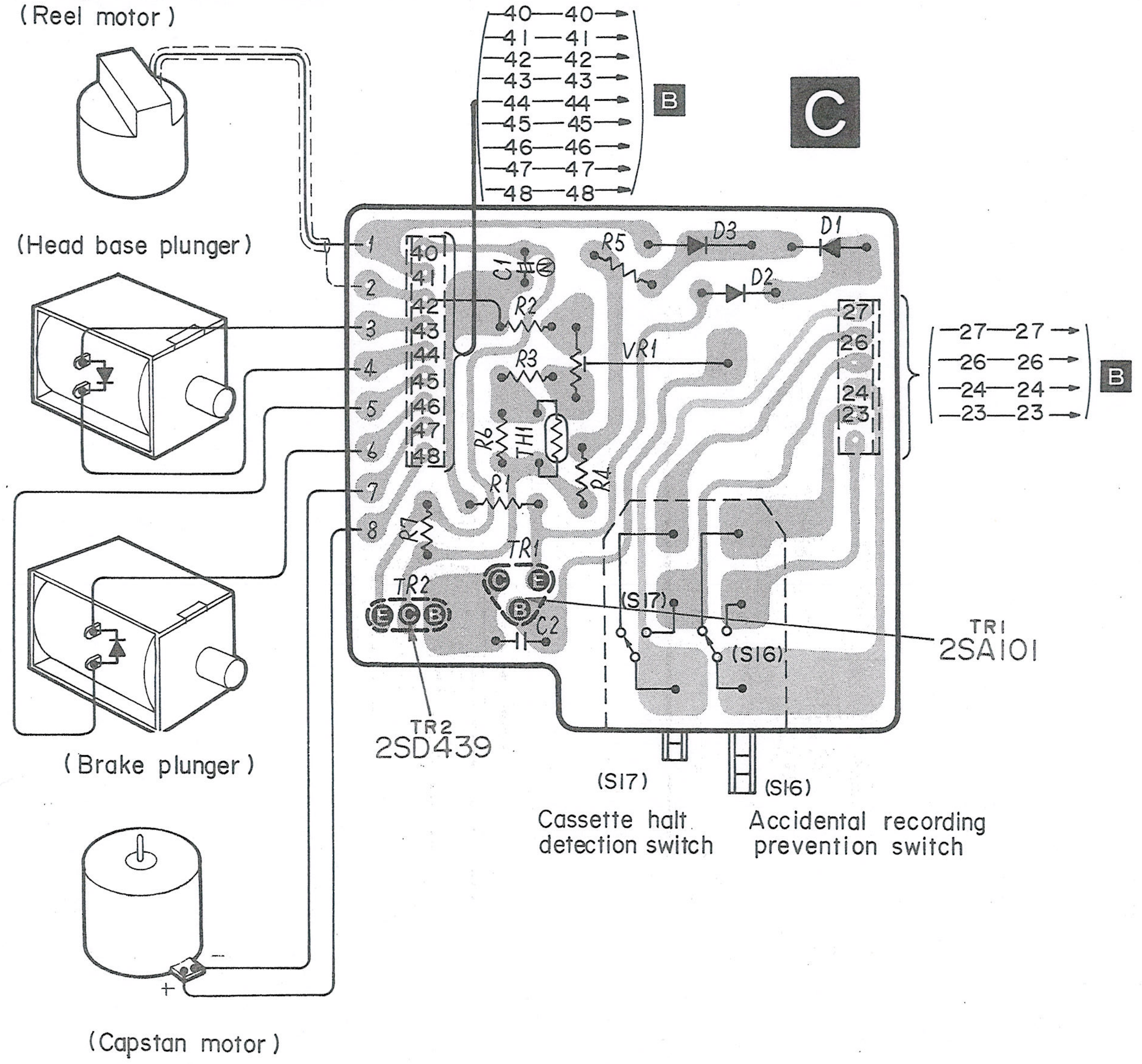

Q1
2SA101
Q2
2SD439
C
C1
25V 4.7
R4 3.9
R5 4.4
D3
R6 330
Q2
R7 160
TH1
D1
D2
R3 1.3K
C2 0.039
Q1
VR1 500(B)
REEL MOTOR
M
R1 1K
R2 1.3K
S16
S17
on
off
CAPSTAN MOTOR
BRAKE
HEAD BASE
D1.2
1S1555
D3
SVD10D3

	㊷	㊶	㊵
play	+12V	—	0
fast forward	+12V	0	—
rewind	0	+12V	—

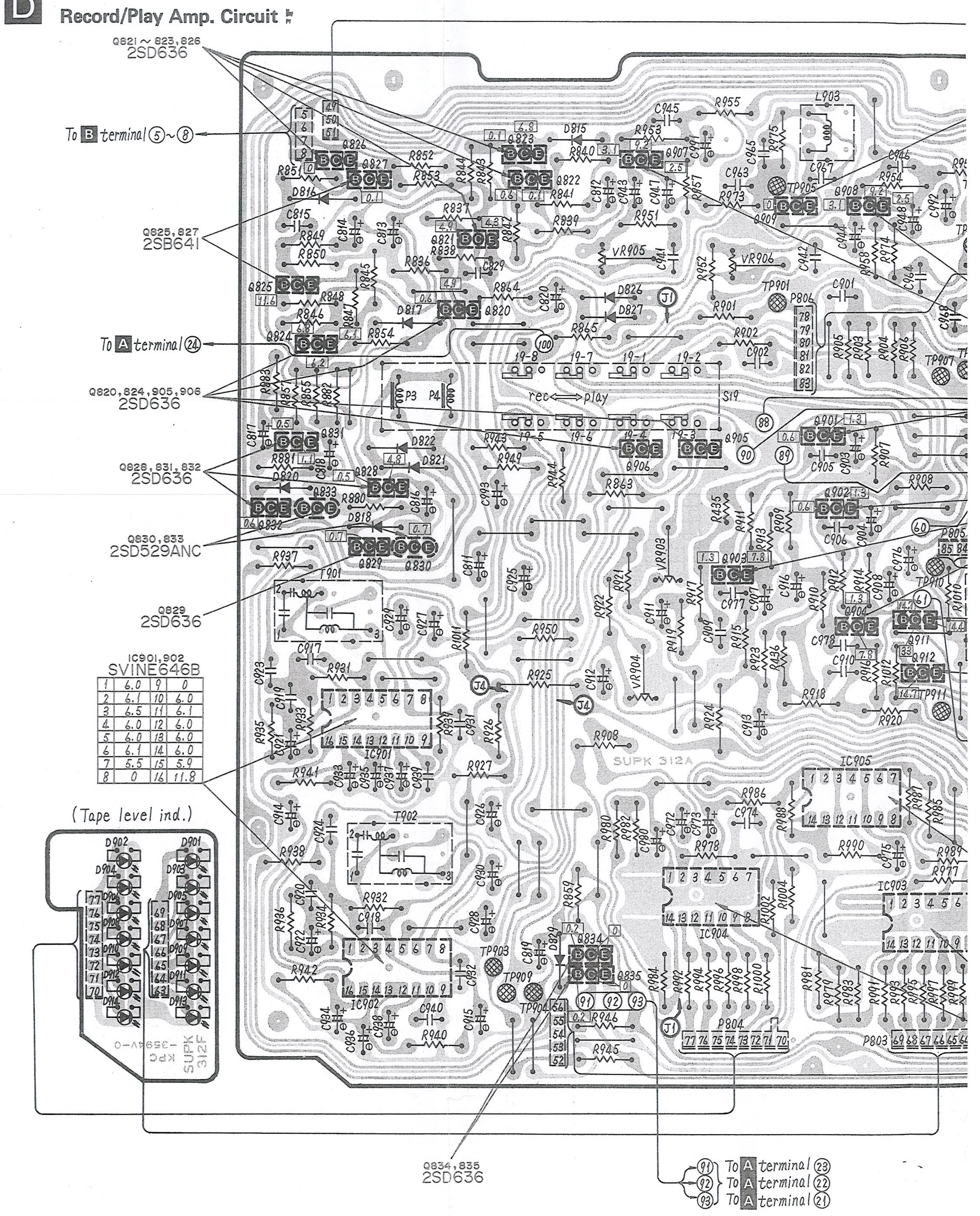
S16 : Accidental recording prevention switch
(The switch turns OFF when the safety lug of cassette is broken OFF and ON when it is in its position.)

S17 : Cassette half detection switch
(The switch turns ON when the cassette has been completely set.)

C Cassette Tape Deck Motor Control Circuit


(Reel motor)
(Head base plunger)
(Brake plunger)
(Capstan motor)
B
C
B
TR1
2SA101
TR2
2SD439
(S17)
Cassette halt detection switch
(S16)
Accidental recording prevention switch
D3
D1
R5
D2
C1
R2
R3
VR1
R6
TH1
R4
R1
C2
(S17)
(S16)

D Record/Play Amp. Circuit


Q821～823,826
2SD636
To B terminal ⑤～⑧
Q825,827
2SB641
To A terminal ㉔
Q820,824,905,906
2SD636
Q828,831,832
2SD636
Q830,833
2SD529ANC
Q829
2SD636
(Tape level ind.)
rec⟺play
S19
SUPK 312A
SUPK 312F
IC901
IC902
IC903
IC904
IC905
T901
T902
Q834,835
2SD636
To A terminal ㉓
To A terminal ㉒
To A terminal ㉑

IC901,902
SVINE646B

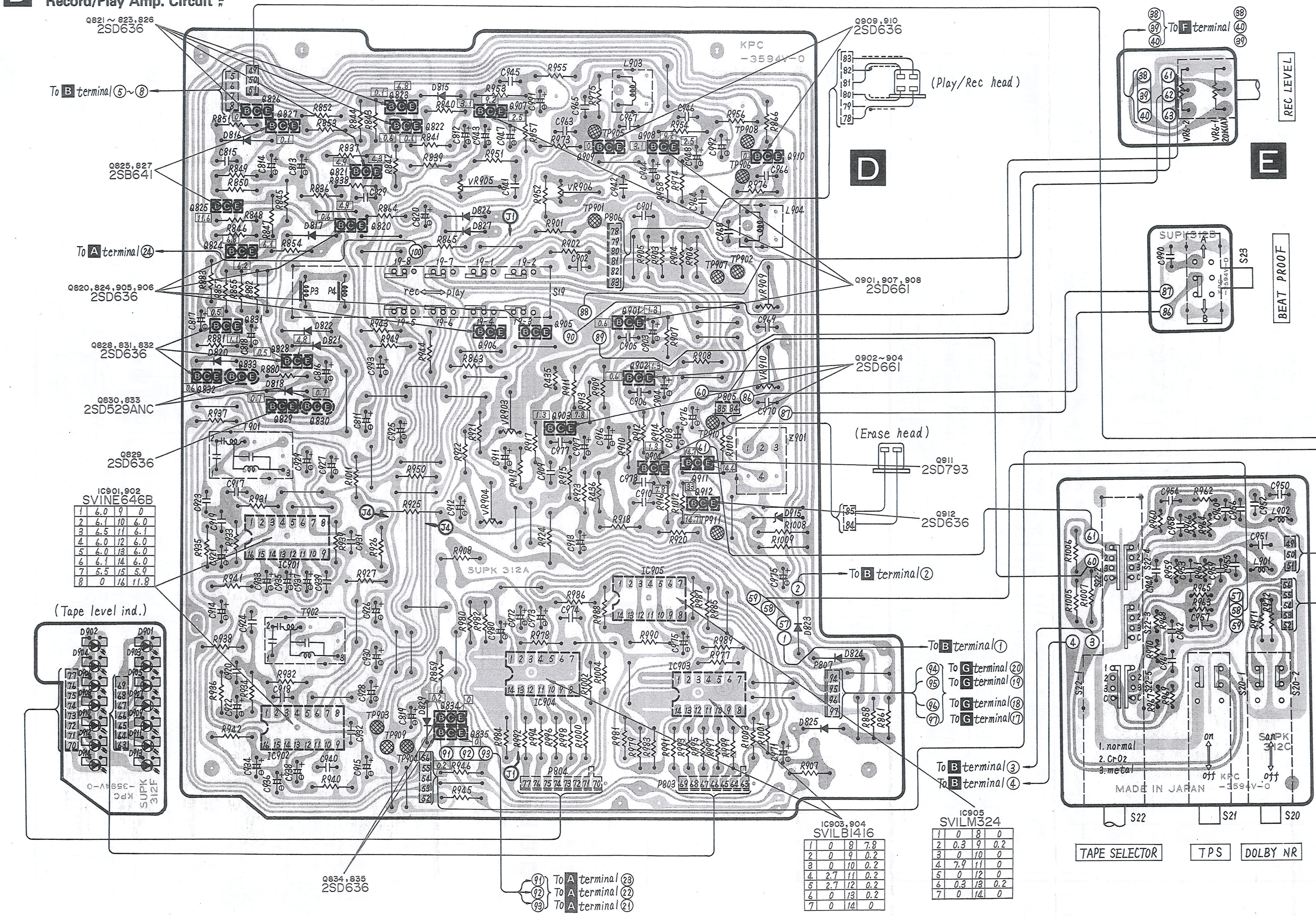
1	6.0	9	0
2	6.1	10	6.0
3	6.5	11	6.1
4	6.0	12	6.0
5	6.0	13	6.0
6	6.1	14	6.0
7	5.5	15	5.9
8	0	16	11.8

㊶	㊵
—	0
0	—
+12V	—

ion switch
ı the safety lug
ınd ON when it is

ı
ı the cassette has

D Record/Play Amp. Circuit


Q821 ~ 823, 826 2SD636
To B terminal ⑤~⑧
Q825, 827 2SB641
To A terminal ㉔
Q820, 824, 905, 906 2SD636
Q828, 831, 832 2SD636
Q830, 833 2SD529ANC
Q829 2SD636
(Tape level ind.)
SUPK 312F
KPC -3594V-0
Q834, 835 2SD636
To A terminal ㉓
To A terminal ㉒
To A terminal ㉑
Q909, 910 2SD636
KPC -3594V-0
(Play/Rec head)
Q901, 907, 908 2SD661
Q902~904 2SD661
(Erase head)
Q911 2SD793
Q912 2SD636
To B terminal ②
To B terminal ①
To G terminal ⑳
To G terminal ⑲
To G terminal ⑱
To G terminal ⑰
To B terminal ③
To B terminal ④
IC905 SVILM324
IC903, 904 SVILB1416
SUPK 312A
rec ⟺ play
S19
P803
P804
P805
P806
P807
D
To F terminal ㊳ ㊴ ㊵
E
REC LEVEL
VR6-1 20KAX
VR6-2
SUPK 312B
S23
BEAT PROOF
1. normal
2. CrO2
3. metal
on
off
off
SUPK 312C
MADE IN JAPAN
KPC -3594V-0
S22
S21
S20
TAPE SELECTOR
TPS
DOLBY NR

IC901, 902
SVINE646B

1	6.0	9	0
2	6.1	10	6.0
3	6.5	11	6.1
4	6.0	12	6.0
5	6.0	13	6.0
6	6.1	14	6.0
7	5.5	15	5.9
8	0	16	11.8

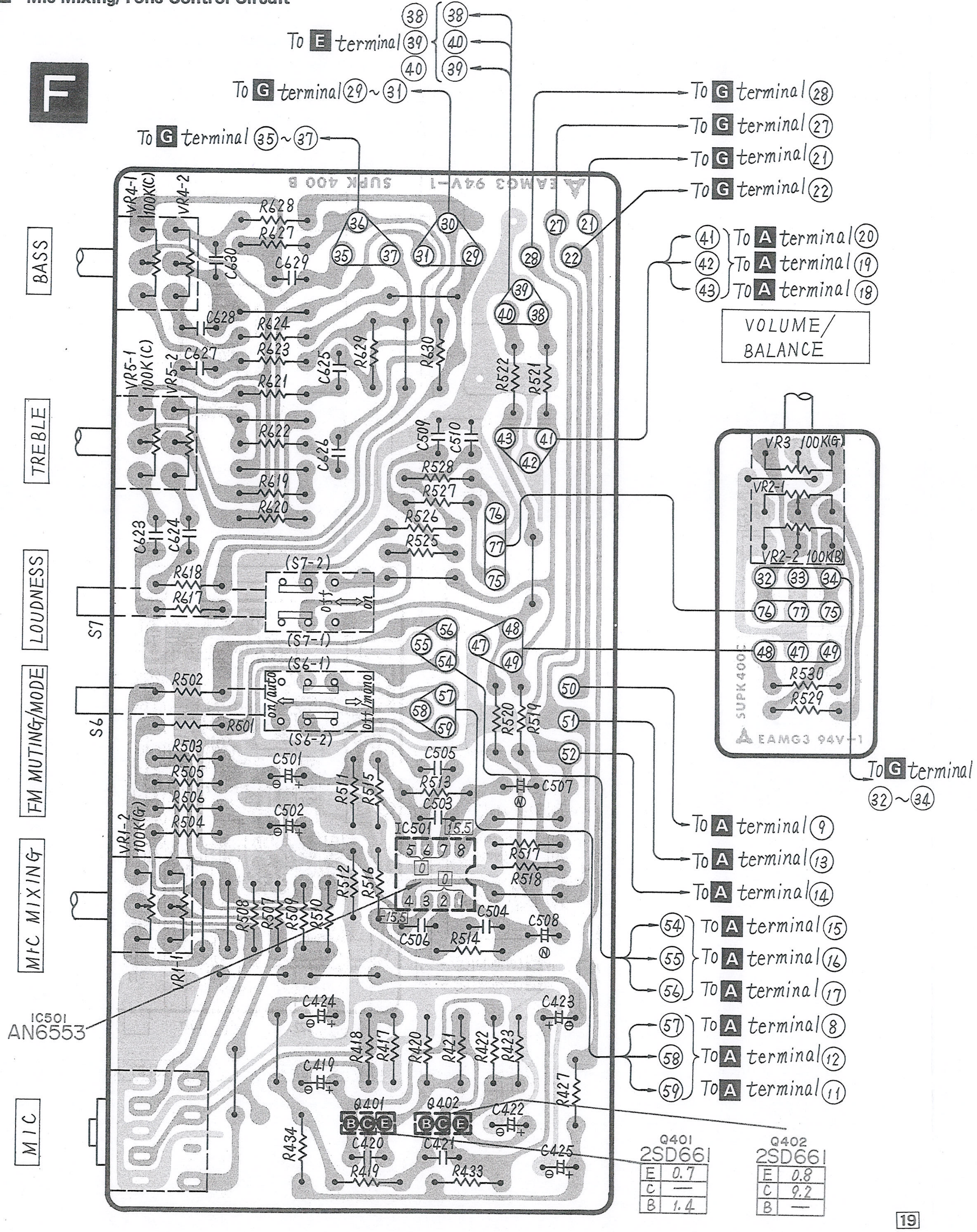
IC903, 904
SVILB1416

1	0	8	7.8
2	0	9	0.2
3	0	10	0.2
4	2.7	11	0.2
5	2.7	12	0.2
6	0	13	0.2
7	0	14	0

IC905
SVILM324

1	0	8	0
2	0.3	9	0.2
3	0	10	0
4	7.9	11	0
5	0	12	0
6	0.3	13	0.2
7	0	14	0

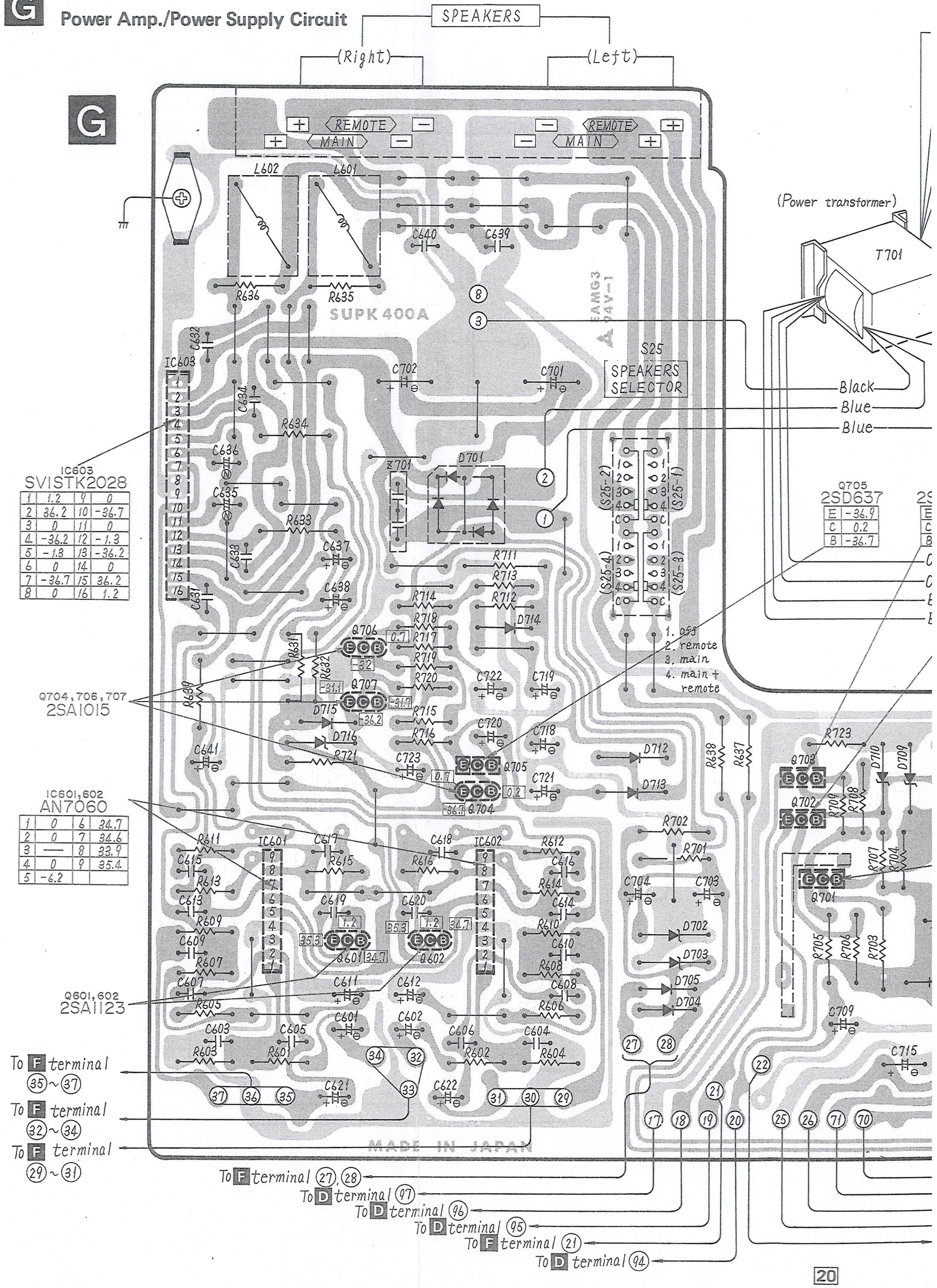
F Mic Mixing/Tone Control Circuit


F
To E terminal 38 39 40
To G terminal 29~31
To G terminal 35~37
To G terminal 28
To G terminal 27
To G terminal 21
To G terminal 22
41 To A terminal 20
42 To A terminal 19
43 To A terminal 18
VOLUME/ BALANCE
VR3 100K(G)
VR2-1
VR2-2 100K(B)
SUPK400C
EAMG3 94V-1
To G terminal 32~34
To A terminal 9
To A terminal 13
To A terminal 14
To A terminal 15
To A terminal 16
To A terminal 17
To A terminal 8
To A terminal 12
To A terminal 11
SUPK 400 B
EAMG3 94V-1
BASS
TREBLE
LOUDNESS
FM MUTING/MODE
MIC MIXING
MIC
S7
S6
VR4-1 100K(C)
VR4-2
VR5-1 100K(C)
VR5-2
VR1-2 100K(G)
VR1-1
(S7-2)
(S7-1)
(S6-1)
(S6-2)
off on
on/auto off/mono
IC501
AN6553
IC501
Q401
Q402

Q401	2SD661
E	0.7
C	—
B	1.4

Q402	2SD661
E	0.8
C	9.2
B	—

G Power Amp./Power Supply Circuit


SPEAKERS
(Right)
(Left)
G
REMOTE
MAIN
SUPK400A
EAMG3 94V-1
(Power transformer)
T701
S25
SPEAKERS SELECTOR
Black
Blue
Blue
1. off
2. remote
3. main
4. main + remote
IC603
IC601
IC602
Q704,706,707
2SA1015
Q601,602
2SA1123
MADE IN JAPAN
To F terminal 35~37
To F terminal 32~34
To F terminal 29~31
To F terminal 27, 28
To D terminal 97
To D terminal 96
To D terminal 95
To F terminal 21
To D terminal 94

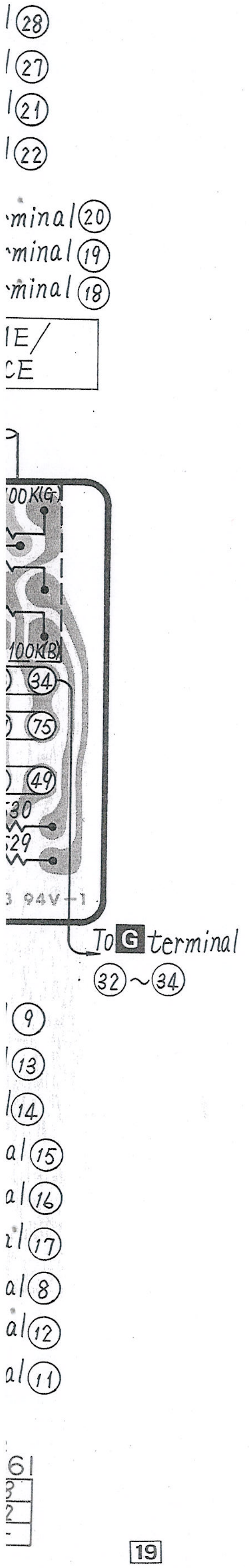
IC603
SVISTK2028

1	1.2	9	0
2	36.2	10	-36.7
3	0	11	0
4	-36.2	12	-1.3
5	-1.3	13	-36.2
6	0	14	0
7	-36.7	15	36.2
8	0	16	1.2

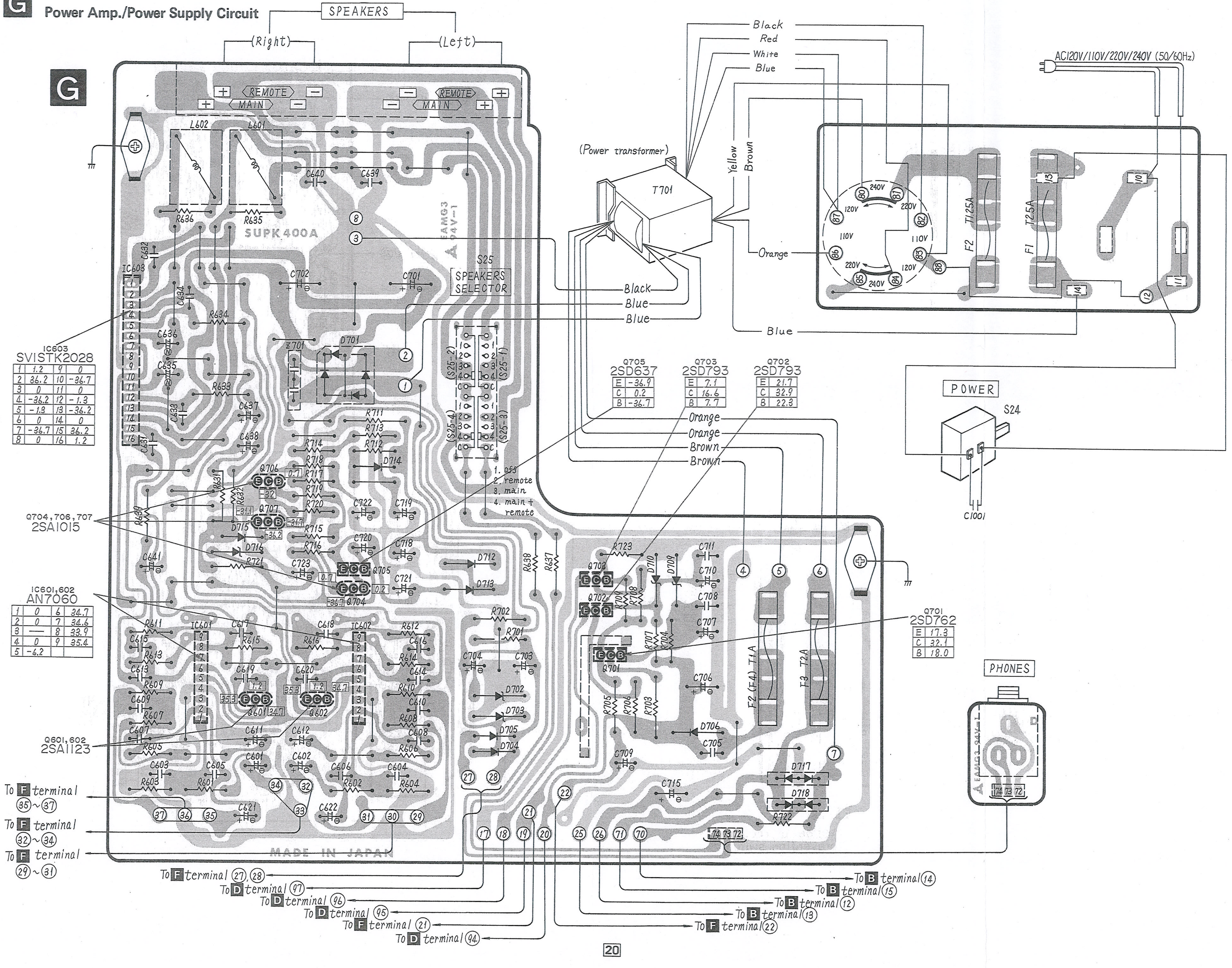
IC601,602
AN7060

1	0	6	34.7
2	0	7	34.6
3	—	8	33.9
4	0	9	35.4
5	-6.2		

Q705	2SD637
E	-36.9
C	0.2
B	-36.7


28
27
21
22
terminal 20
terminal 19
terminal 18
IE/
CE
00K(G)
100K(B)
34
75
49
30
29
3 94V-1
To G terminal
32～34
9
13
14
15
16
17
8
12
11
6
3
2

G Power Amp./Power Supply Circuit


SPEAKERS
(Right)
(Left)
G
REMOTE
MAIN
L602
L601
C640
C639
R636
R635
SUPK400A
EAMG3
94V-1
8
3
S25
SPEAKERS SELECTOR
C632
IC603
C634
C702
C701
R634
C636
C635
Z701
D701
2
1
R633
C633
C637
C638
C631
R711
R713
R712
R714
R718
R717
R719
R720
D714
(S25-2)
(S25-1)
(S25-4)
(S25-3)
1. off
2. remote
3. main
4. main + remote
Q706
Q707
R631
R632
R639
D715
D716
R715
R716
C722
C719
C720
C718
C641
R721
C723
Q705
Q704
C721
D712
D713
R638
R637
R611
IC601
C617
C618
IC602
R612
C615
C616
R613
R615
R616
R614
C613
C619
C620
C614
R609
R610
C609
C610
Q601
Q602
R607
R608
C607
C611
C612
C608
R605
R606
C601
C602
C603
C605
C606
C604
R603
R601
R602
R604
34
32
33
C621
C622
37
36
35
31
30
29
MADE IN JAPAN
R702
R701
C704
C703
D702
D703
D705
D704
27
28
R723
C711
Q703
Q702
D710
D709
C710
C708
C707
R709
R708
R707
R704
Q701
C706
R705
R706
R703
D706
C705
C709
C715
D717
D718
R722
4
5
6
7
F2 (F4) T1A
T3 T2A
21
22
17
18
19
20
25
26
71
70
74 73 72
Black
Red
White
Blue
AC120V/110V/220V/240V (50/60Hz)
(Power transformer)
T701
Yellow
Brown
Orange
Black
Blue
Blue
Blue
Orange
Orange
Brown
Brown
80
81
82
83
84
85
86
87
88
240V
220V
120V
110V
F2 T1.25A
F1 T2.5A
13
14
10
11
12
POWER
S24
C1001
PHONES
EAMG3 94V-1
74 73 72
To F terminal 35～37
To F terminal 32～34
To F terminal 29～31
To F terminal 27, 28
To D terminal 97
To D terminal 96
To D terminal 95
To F terminal 21
To D terminal 94
To B terminal 14
To B terminal 15
To B terminal 12
To B terminal 13
To F terminal 22

IC603
SVISTK2028

1	1.2	9	0
2	36.2	10	-36.7
3	0	11	0
4	-36.2	12	-1.3
5	-1.3	13	-36.2
6	0	14	0
7	-36.7	15	36.2
8	0	16	1.2

Q704, 706, 707
2SA1015

IC601, 602
AN7060

1	0	6	34.7
2	0	7	34.6
3	—	8	33.9
4	0	9	35.4
5	-6.2		

Q601, 602
2SA1123

Q705
2SD637

E	-36.9
C	0.2
B	-36.7

Q703
2SD793

E	7.1
C	16.6
B	7.7

Q702
2SD793

E	21.7
C	32.9
B	22.3

Q701
2SD762

E	17.3
C	32.1
B	18.0

■ REPLACEMENT PARTS LIST...Electric Parts

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components use only manufacturer's specified parts.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUITS			
IC101		AN217P–BB	IC, FM IF Amplifier & AM Converter
IC102		SVIUPC1167C	IC, FM IF Amplifier & FM Detector
IC103		AN6876	IC, Signal Meter LED Amplifier
IC301		SVIHA1156W	IC, FM MPX
IC401		SVINJM4559DD	IC, Equalizer Amplifier
IC501		AN6553	IC, Mic & Mixing Amp.
IC601, 602		AN7060F	IC, Differential Amplifier
IC603		SVISTK2028	IC, Power Amplifier
IC801		AN6251	IC, Logic Control
IC802		SVIM53206P	IC, Inverter
IC803		SVIUPC78M05H	IC, Constant-Voltage
IC804		DN6838	IC, Rotary Primary
IC901, 902		SVINE646B	IC, Dolby
IC903, 904		SVILB1416	IC, Tape Level LED Driver
IC905		SVILM324	IC, Tape Level LED Driver
TRANSISTORS			
Q1		2SK195–H1	Transistor, FM RF Amplifier
Q2. 3		2SC2377–C	Transistor, FM Mixer & Local Oscillator
Q101, 102		2SD636	Transistor, Switching
Q201		2SC2206–B	Transistor, AM IF Amplifier
Q301, 302		2SB745–S	Transistor, AF Amplifier
Q303		2SB641	Transistor, Muting
Q304, 305		2SD637	Transistor, Muting
Q401, 402		2SD661–S	Transistor, Mic Amplifier
Q601, 602		2SA1123–R	Transistor, Muting
Q701		2SD762–O	Transistor, Stabilizer
Q702, 703		2SD793–P	Transistor, Stabilizer
Q704, 706, 707		2SA1015–Y	Transistor, Protection
Q705		2SD637	Transistor, Protection
Q801 ~ 803		2SD636	Transistor, Plunger Driver
Q806 ~ 808		2SD636	Transistor, Switching
Q811 ~ 813		2SD636	Transistor, TPS Control
Q820 ~ 824		2SD636	Transistor, Muting
Q826, 828, 829		2SD636	Transistor, Rec Mute Control
Q831, 832, 834		2SD636	Transistor, Plunger Driver
Q835, 838, 905		2SD636	Transistor, Switching
Q906, 909, 910		2SD636	Transistor, Muting
Q912		2SD636	Transistor, Rec Mute Control
Q804, 809, 911		2SD793–P	Transistor, Plunger Driver & Regulator
Q805, 810		2SD592ANC–Q	Transistor, Switching
Q814, 816, 818		2SC1815–Y	Transistor, Motor Control
Q815, 817, 819		2SA1015–Y	Transistor, Motor Control
Q825, 827		2SB641	Transistor, DC Amplifier
Q830, 833		2SD592ANC–Q	Transistor, Plunger Driver
Q901 ~ 904 907, 908		2SD661–S	Transistor Playback & Recording Amp

Ref. No.		Part No.	Part Name & Description
DIODES			
D101 ~ 104		SVDTLR205	Light Emitting Diode, FM Stereo & Signal Meter
D105, 106		SVDTLG205	Light Emitting Diode, Signal Meter
D107, 204, 302		**MA162A**	Diode, Switching
D108		LN221RP	Light Emitting Diode, Dial Indicator
D110		**20A90**	Diode, Meter Detection
D201 ~ 203		**20A90**	Diode, AM Detection & Switching
D301, 303		**MA162A**	Diode, Switching
D701	⚠	SVDS4VB10	Rectifier
D702, 703		**SVDRD16EB**	Diode, 16V Zener
D704, 705 714, 715		**MA162A**	Diode, Switching
D706, 712, 713		**SVDSR1K2**	Diode, Power Mute Switching
D709		MA1180	Diode, 18V Zener
D710		**RVD1N4748**	Diode, 22V Zener
D716		**RVDRD6R2EB**	Diode, 6.2V Zener
D717	⚠	**RVD10DC4R**	Rectifier
D718	⚠	**RVD10DC4**	Rectifier
D801		LN221RP	Light Emitting Diode, Rec. Indicator
D802		LN321GP	Light Emitting Diode, Play, Indicator
D803, 804 810 ~ 812 825, 827, 829		**MA162A**	Diode, Switching
D805 ~ 807 816, 817, 823 824, 826		**20A90**	Diode, Switching
D815		**MA27A1**	Diode, Bias
D821, 822		**SVDSR1K2**	Diode, Verse Current Gegenstron
D901 ~ 906		LN222RP	Light Emitting Diode. Tape Level Meter
D907 ~ 914		LN322GP	Light Emitting Diode, Tape Level Meter
D915		MA1150A	Diode, 15V Zener
COILS and TRANSFORMERS			
L1		SLA4P25	Coil, FM Antenna
L2		SLD4P29	Coil, FM-RF Detector
L3		**RLQY15G–O**	Coil, Choke
L4		SLO4P63–P	Coil, FM Local Oscillator
L101		SLQX180–5M	Coil, Choke
L201		SLFK2D1	Coil, AM Antenna
L601, 602		SLQY15G–3F	Coil, Choke
L901, 902		QLQX2422M	Coil, Choke
L903, 904		QLH2008	Coil, Recording Bias Tape
T101		SLI4C507	Transformer, FM-Discriminator
T201		SLO2C9–P	Coil, AM Oscillator
T202		SLI2C129	Transformer, AM IF
T203		SLI2C413	Transformer, AM IF
T701	⚠	SLTK5P4–W	Transformer, Power Source
T901, 902		SLMK1Z1–M	Low Pass, Filter

Ref. No.		Part No.	Part Name & Description
CERAMIC FILTERS			
CF101, 102		SVFE107MA8A	Ceramic Filter, FM-IF 10.7 MHz, Red
		SVFE107MA8C	Ceramic Filter, FM-IF 10.73MHz, Orange
		SVFE107MA8E	Ceramic Filter, FM-IF 10.76 MHz, White (Use pair ranks as same as CF101 and CF102)
CF201		SVFSFU455B	Ceramic Filter, AM-IF 455 kHz
VARIABLE RESISTORS			
VR1		EWJFWA053B15	Mic, Mixing Control, 100kΩ (B)
VR2, 3		EWJ66AF31869	Volume, 100kΩ (B) & Balance Control, 100kΩ (G)
VR4, 5		EWJFWA053C15	Bass & Treble Control, 100kΩ (C)
VR6		EWJSHAF22A24	Recording Control, 20kΩ (A)
VR101		**EVNM4AA00B53**	Muting Level Adjustment, 5kΩ (B)
VR102		**EVNM4AA00B24**	LED Level Meter Adjustment, 20kΩ (B)
VR301		**EVTS3MA00B14**	PLL VCO Adjustment, 10kΩ (B)
VR903, 904		**EVNM4AA00B24**	Playback Level Adjustment, 20kΩ (B)
VR905, 906		**EVNM4AA00B14**	Recording Current Adjustment, 10kΩ (B)
VR909, 910		**EVNM4AA00B54**	Recording Bias Adjustment, 50kΩ (B)
VARIABLE CAPACITORS			
VC1 ~ 3 201. 202 (CT1 ~ 3 201, 202)		ECV5MD34X71G	Tuning Gang FM/AM (W/FM Trimmer)
COMPONENT COMBINATIONS			
Z1		EXRP181K682S	Component Combination, 6.8kΩ, 180pF
Z2		EXRP103P102C	Component Combination, 1kΩ·0.001μF
Z101		EXF3SL04C	Component Combination, 0.01μF, (x 3)
Z201		EXRF203Z471S	Component Combination, 470Ω · 0.01μF, (x 2)
Z301		EXA6YD03CL	Component Combination, 100kΩ, (x 2) 3.9kΩ, (x 2), 1500pF, (x 2)
Z701		SXRFS203ZSM	Component Combination, 0.01μF, (x 2)
Z801		EXBP86562K	Component Combination, 5.6kΩ, (x 6)
Z802		EXBT46101K	Component Combination, 100Ω, (x 6)
Z803, 804		EXF3YL01C	Component Combination, 0.01μF, (x 3)
Z901		SLO9Z11–M	Component Combination, OSC Block
FUSES			
F1	⚠	XBA2C25TR0	Fuse, 2.5A (250V)
F2	⚠	XBA2C12TR0	Fuse, 1.2A (250V)
F3	⚠	XBA2C20TR0	Fuse, 2.0A (250V)
F4	⚠	XBA2C10TR0	Fuse, 1.0A (250V)
LAMPS			
PL901		SWL71	Lamp, Power Indicator (7.5V, 0.075A)

Ref. No.		Part No.	Part Name & Description
SWITCHES			
S1-1 ~ S1-5		SSHK10	Switch Selector, (FM)
S2-1 ~ S2-4		SSHK10	Switch Selector, (AM)
S3-1 ~ S3-3		SSHK10	Switch Selector, (Phono)
S4-1 ~ S4-3		SSHK10	Switch Selector, (Aux)
S5-1 ~ S5-4		SSHK10	Switch Selector, (Tape)
S6, 7		SSHK11	Switch, FM Muting/Mode & Loudness
S8 ~ 14		SSG1	Switch, Cassette Deck Control
S15		SSSK3	Switch, Timer Rec/Play
S16, 17		SMQT1077	Switch, Cassette Half and Accidental, Recording Prevention
S19		SSSK2	Switch, Plunger
S20, 21		SSHK11	Switch, Dolby NR & TPS
S22		SSRK6	Switch; Tape Selector
S23	⚠	ESB90619A	Switch, Power Source
S24		SSSK4	Switch, AM Beat Proof
S25		SSFK1	Switch, Speaker Selector
S26	⚠	ESE37200	Switch, Voltage Adjuster

• Cassette tape deck motor control

TRANSISTORS			
TR1		**2SA102–BA**	Transistor, Reel Motor Control
TR2		**2SD390AQ**	Transistor, Reel Motor Control
DIODES			
D1, 2		**MA162A**	Diode, Reel Motor Control
D3		**SM112**	Diode, Reel Motor Control
VARIABLE RESISTOR			
VR1		**EVTS3MA00B52**	Take-Up Torque Adjustment, 500Ω (B)
THERMISTER			
TH1		SRT15201409	Thermal Compensation, 500Ω
RESISTORS			
R1		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R2, 3		**ERD25FJ132**	Carbon, 1/4W, 1.3kΩ, ± 5%
R4		**ERX1ANJ3R9**	Metal Film, 1W, 3.9Ω, ± 5%
R5		**ERX1ANJ4R7**	Metal Film, 1W, 4.7Ω, ± 5%
R6		**ERD25FJ331**	Carbon, 1/4W, 330Ω, ± 5%
R7		**ERD25FJ161**	Carbon, 1/4W, 160Ω, ± 5%
CAPACITORS			
C1	⚠	**ECEA25N4R7**	Non-Polar Electrolytic, 25V, 4.7μF
C2		ECQM1H393KZ	Polyester, 50V, 0.01μF, ± 10%

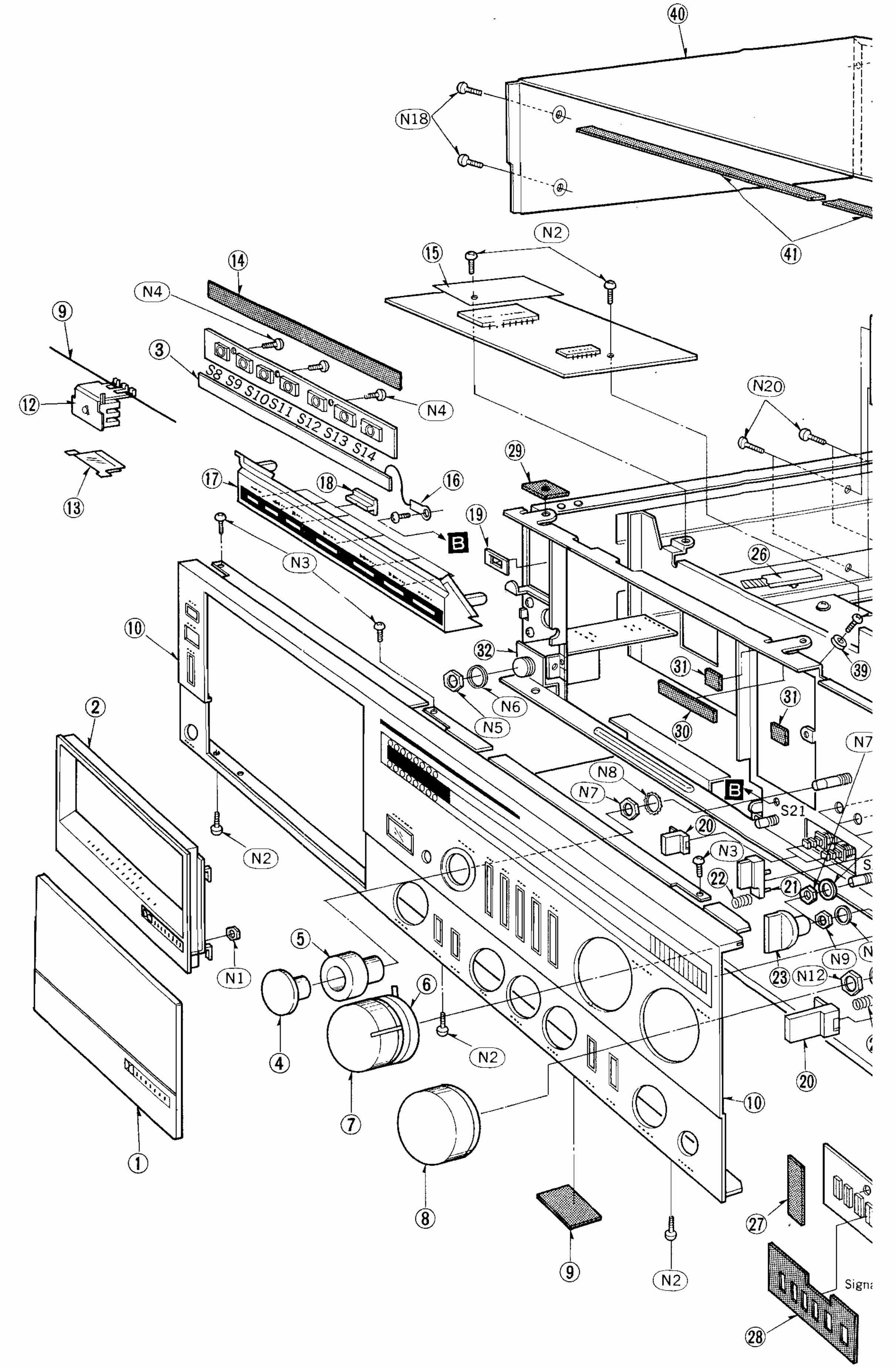
■ RESISTORS AND CAPACITORS

Ref. No.		Part No.	Part Name & Description
RESISTORS			
R1		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R2		**ERD25FJ470**	Carbon, 1/4W, 47Ω, ± 5%
R3		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R4		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R5		**ERD25FJ561**	Carbon, 1/4W, 560Ω, ± 5%
R6		**ERD25TJ393**	Carbon, 1/4W, 39kΩ, ± 5%
R7		**ERD25FJ822**	Carbon, 1/4W, 8.2kΩ, ± 5%
R8		**ERD25FJ222**	Carbon, 1/4W, 2.2kΩ, ± 5%
R9		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R102, 103		**ERD25FJ331**	Carbon, 1/4W, 330Ω, ± 5%
R104		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ± 5%
R105		**ERD25FJ331**	Carbon, 1/4W, 330Ω, ± 5%
R106		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R107		**ERD25TJ273**	Carbon, 1/4W, 27kΩ, ± 5%
R108		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R109		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R110		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R111		**ERD25FJ392**	Carbon, 1/4W, 3.9kΩ, ± 5%
R112		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R113		**ERD25FJ470**	Carbon, 1/4W, 47Ω, ± 5%
R114		**ERD25FJ271**	Carbon, 1/4W, 270Ω, ± 5%
R115		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R116		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R117		**ERD25FJ122**	Carbon, 1/4W, 1.2kΩ, ± 5%
R120, 121		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R201		**ERD25FJ101**	Carbon, 1/4W, 100Ω, ± 5%
R202		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R203		**ERD25FJ470**	Carbon, 1/4W, 47Ω, ± 5%
R204		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R205		**ERD25TJ393**	Carbon, 1/4W, 39kΩ, ± 5%
R206		**ERD25TJ684**	Carbon, 1/4W, 680kΩ, ± 5%
R207		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R208		**ERD25FJ681**	Carbon, 1/4W, 3.3kΩ, ± 5%
R209		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R210		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R211		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ± 5%
R212		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R220		**ERD25TJ563**	Carbon, 1/4W, 56kΩ, ± 5%
R301		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R302		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ± 5%
R303		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R304		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R305		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R306		**ERD25FJ101**	Carbon, 1/4W, 100Ω, ± 5%
R307		**ERD25FJ391**	Carbon, 1/4W, 390Ω, ± 5%
R308, 309		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R310 ~ 313		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R314, 315		**ERD25FJ391**	Carbon, 1/4W, 390Ω, ± 5%
R316		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R318		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R319		**ERD25TJ393**	Carbon, 1/4W, 39kΩ, ± 5%
R320		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R321		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R401, 402		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ± 5%
R403, 404		**ERD25FJ391**	Carbon, 1/4W, 390Ω, ± 5%
R405, 406		**ERD25FJ271**	Carbon, 1/4W, 270Ω, ± 5%
R407, 408		**ERD25FJ680**	Carbon, 1/4W, 68Ω, ± 5%
R409, 410		**ERD25TJ184**	Carbon, 1/4W, 180kΩ, ± 5%
R411, 412		**ERD25TJ123**	Carbon, 1/4W, 12kΩ, ± 5%
R413, 414		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R417		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R418		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R419		**ERD25TJ154**	Carbon, 1/4W, 150kΩ, ± 5%
R420		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R421		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R422		**ERD25TJ823**	Carbon, 1/4W, 82kΩ, ± 5%
R423		**ERD25FJ561**	Carbon, 1/4W, 560Ω, ± 5%
R425, 426		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R427	⚠	**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R431, 432		**ERD25TJ563**	Carbon, 1/4W, 56kΩ, ± 5%
R501 ~ 506		**ERD25TJ273**	Carbon, 1/4W, 27kΩ, ± 5%
R507, 508		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R509, 510		**ERD25TJ273**	Carbon, 1/4W, 27kΩ, ± 5%
R511, 512		**ERD25TJ393**	Carbon, 1/4W, 39kΩ, ± 5%
R513, 514		**ERD25TJ823**	Carbon, 1/4W, 82kΩ, ± 5%
R515 ~ 518		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R519, 520		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R521, 522		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R523, 524		**ERD25FJ331**	Carbon, 1/4W, 330Ω, ± 5%
R525, 526		**ERD25TJ183**	Carbon, 1/4W, 18kΩ, ± 5%
R527, 528		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R529, 530		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R601, 602		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R603, 604		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R605 ~ 608		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R609, 610		**ERD25TJ123**	Carbon, 1/4W, 12kΩ, ± 5%
R611, 612		**ERD25FJ821**	Carbon, 1/4W, 820Ω, ± 5%
R613, 614		**ERD25FJ561**	Carbon, 1/4W, 560Ω, ± 5%
R615, 616	⚠	**ERD25FJ470**	Carbon, 1/4W, 47Ω, ± 5%
R617, 618		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R619, 620		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R621, 622		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R623, 624		**ERD25TJ273**	Carbon, 1/4W, 27kΩ, ± 5%
R627, 628		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R629, 630		**ERD25FJ681**	Carbon, 1/4W, 680Ω, ± 5%
R631, 632	⚠	**ERD50FJ272**	Carbon, 1/2W, 2.7kΩ, ± 5%
R633, 634	⚠	**ERD50FJ222**	Carbon, 1/2W, 2.2kΩ, ± 5%
R635, 636	⚠	**ERD50FJ100**	Carbon, 1/2W, 10Ω, ± 5%
R637, 638	⚠	**ERG1ANJ331**	Metal Oxide, 1W, 330Ω, ± 5%
R639		**ERD50FJ470**	Carbon, 1/2W, 47Ω, ± 5%
R701, 702	⚠	**ERD50FJ152**	Carbon, 1/2W, 1.5kΩ, ± 5%
R703	⚠	**ERQ1CJ220**	Fuse Type Metallic, 1W, 22Ω, ± 5%
R704		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R705	⚠	**ERD50FJ390**	Carbon, 1/2W, 39Ω, ± 5%
R706	⚠	**ERD50FJ100**	Carbon, 1/2W, 10Ω, ± 5%
R707		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R708	⚠	**ERD50FJ100**	Carbon, 1/4W, 10Ω, ± 5%
R709		**ERD25FJ122**	Carbon, 1/4W, 1.2kΩ, ± 5%
R711	⚠	**ERG1ANJ152**	Metal Oxide, 1W, 1.5kΩ, ± 5%
R712		**ERD25TJ124**	Carbon, 1/4W, 120kΩ, ± 5%
R713		**ERD25TJ683**	Carbon, 1/4W, 68kΩ, ± 5%
R714		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ± 5%
R715		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R716		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R717		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R718		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R719		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R720		**ERD25FJ222**	Carbon, 1/4W, 2.2kΩ, ± 5%
R721	⚠	**ERD50FJ332**	Carbon, 1/2W, 3.3kΩ, ± 5%
R722	⚠	**ERD50FJ820**	Carbon, 1/2W, 82Ω, ± 5%
R723	⚠	**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R801		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R802		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R804		**ERD25TJ183**	Carbon, 1/4W, 18kΩ, ± 5%
R805		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R806		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R809 ~ 811		**ERD25FJ122**	Carbon, 1/4W, 1.2kΩ, ± 5%
R812		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R814		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R815	⚠	**ERF7AJ180**	Non-Flammable, 7W, 18Ω, ± 5%
R816		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R817, 818		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R819	⚠	**ERF7AJ180**	Non-Flammable, 7W, 18Ω, ± 5%
R820		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ± 5%
R821		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R822		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R823, 824		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ± 5%
R825		**ERD25FJ122**	Carbon, 1/4W, 1.2kΩ, ± 5%
R827, 828		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R829		**ERD25FJ122**	Carbon, 1/4W, 1.2kΩ, ± 5%
R831		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R834, 835		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R836		**ERD25TJ273**	Carbon, 1/4W, 27kΩ, ± 5%
R837		**ERD25FJ222**	Carbon, 1/4W, 2.2kΩ, ± 5%
R838		**ERD25TJ154**	Carbon, 1/4W, 150kΩ, ± 5%
R839		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R840		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R841		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R842		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R843		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R844		**ERD25FJ470**	Carbon, 1/4W, 47Ω, ± 5%
R845		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R846		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R847		**ERD25FJ122**	Carbon, 1/4W, 1.2kΩ, ± 5%
R848		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R849		**ERD25FJ470**	Carbon, 1/4W, 47Ω, ± 5%
R850 ~ 852		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R853		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ± 5%
R854		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R855, 857		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R858		**ERD25FJ222**	Carbon, 1/4W, 2.2kΩ, ± 5%
R859		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R861		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R863		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R864, 865		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ± 5%
R866		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R867		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R871		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R872, 873		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R874, 875		**ERD25FJ122**	Carbon, 1/4W, 1.2kΩ, ± 5%
R876	⚠	**ERD50FJ220**	Carbon, 1/2W, 22Ω, ± 5%
R880, 881		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R882		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R883		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R884		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R887, 888		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R901, 902		**ERD25FJ100**	Carbon, 1/4W, 10Ω, ± 5%
R903, 904		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R905, 906		**ERD25FJ331**	Carbon, 1/4W, 330Ω, ± 5%
R907, 908		**ERD25FJ151**	Carbon, 1/4W, 150Ω, ± 5%
R909, 910		**ERO25CKF1503**	Metal Film, 1/4W, 150kΩ, ± 1%
R911, 912		**ERD25TJ334**	Carbon, 1/4W, 330kΩ, ± 5%
R913, 914		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R915, 916		**ERD25FJ822**	Carbon, 1/4W, 8.2kΩ, ± 5%
R917, 918		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ± 5%
R919, 920		**ERD25FJ332**	Carbon 1/4W, 3.3kΩ, ± 5%
R921, 922		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R923		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R924	⚠	**ERD50FJ331**	Carbon, 1/2W, 330Ω, ± 5%
R925	⚠	**ERD50FJ271**	Carbon, 1/2W, 270Ω, ± 5%
R926, 927		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R931, 932		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R933, 934		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R935, 936		**ERD25TJ474**	Carbon, 1/4W, 470kΩ, ± 5%
R937, 938		**ERD25FJ181**	Carbon, 1/4W, 180Ω, ± 5%
R939, 940		**ERD25TJ184**	Carbon, 1/4W, 180kΩ, ± 5%
R941, 942		**ERD25TJ274**	Carbon, 1/4W, 270kΩ, ± 5%
R943, 944		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R945, 946		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R949, 950		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R951, 952		**ERD25TJ123**	Carbon, 1/4W, 12kΩ, ± 5%
R953, 954		**ERD50TJ155**	Carbon, 1/2W, 1.5MΩ, ± 5%
R955, 956		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R957, 958		**ERD25FJ122**	Carbon, 1/4W, 1.2kΩ, ± 5%
R959, 960		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R961, 962		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R963, 964		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R965, 966		**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ± 5%
R967, 968		**ERD25FJ392**	Carbon, 1/4W, 3.9kΩ, ± 5%
R969 ~ 972		**ERD25TJ334**	Carbon, 1/4W, 330kΩ, ± 5%
R973, 974		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R975, 976		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R977, 978		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R979, 980		**ERD25TJ124**	Carbon, 1/4W, 120kΩ, ± 5%
R981, 982		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R983, 984		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ± 5%
R985, 986		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R987, 988		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R989, 990		**ERD25FJ331**	Carbon, 1/4W, 330Ω, ± 5%
R991 ~ 996		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R997 ~ 1000		**ERD25FJ470**	Carbon, 1/4W, 47Ω, ± 5%
R1001 ~ 1004		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R1005		**ERD25FJ271**	Carbon, 1/4W, 270Ω, ± 5%
R1006		**ERD25FJ121**	Carbon, 1/4W, 120Ω, ± 5%
R1007	⚠	**ERD50FJ390**	Carbon, 1/2W, 39Ω, ± 5%
R1008	⚠	**ERD50FJ470**	Carbon, 1/2W, 47Ω, ± 5%
R1009	⚠	**ERD50FJ332**	Carbon, 1/2W, 3.3kΩ, ± 5%
R1010	⚠	**ERD25FJ4R7**	Carbon, 1/4W, 4.7Ω, ± 5%
R1011		**ERD25FJ561**	Carbon, 1/4W, 560Ω, ± 5%
R1012		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
CAPACITORS			
C2		ECCD1H070DC	Ceramic, 50V, 7pF, ± 0.5pF
C3		ECCD1H470KC	Ceramic, 50V, 47pF, ± 10%
C4		ECKD1H102MD	Ceramic, 50V, 0.002μF, ± 20%
C5, 6		ECCD1H100KC	Ceramic, 50V, 10pF, ± 10%
C7		ECCD1H150KC	Ceramic, 50V, 15pF, ± 10%
C8		ECKD1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$%
C9		ECCD1H390KC	Ceramic, 50V, 39pF, ± 10%
C10		ECCD1H180KC	Ceramic, 50V, 18pF, ± 10%
C11		ECKD1H102ZF	Ceramic, 50V, 0.001μF, $^{+80}_{-20}$%
C12, 20		ECKD1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$%
C101, 102		ECKD1H223ZF	Ceramic 50V, 0.022μF, $^{+80}_{-20}$%
C104		**ECEA1HS100**	Electrolytic, 50V, 10μF
C105		ECKD1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$%
C106		ECKD1H331KB	Ceramic, 50V, 330pF, ± 10%
C107, 108		**ECEA50Z1**	Electrolytic, 50V, 1μF
C110, 113		**ECEA50Z1**	Electrolytic, 50V, 1μF
C114		ECKD1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$%
C115		**ECEA50ZR47**	Electrolytic, 50V, 0.47μF
C116		ECKD1H103ZF	Ceramic, 50V, 0.01μF, $^{+80}_{-20}$%
C120		**ECEA1HS100**	Electrolytic, 50V, 10μF
C121, 122		ECKD1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$%
C130		**ECEA1HS100**	Electrolytic, 50V, 10μF
C131		**ECEA50Z1**	Electrolytic, 50V, 1μF
C132, 133		ECKD1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$%
C202		ECCD1H150KC	Ceramic, 50V, 15pF, ± 10%
C203		ECQS1361JZ	Polyester, 125V, 360pF, ± 5%
C204, 205		ECKD1H103MD	Ceramic, 50V, 0.01μF, ± 20%
C206		ECKD1H223ZF	Ceramic 50V, 0.022μF, $^{+80}_{-20}$%
C207		**ECEA50Z1**	Electrolytic, 50V, 1μF
C208		ECCD1H330KC	Ceramic 50V, 33pF, ± 10%
C209		**ECEA50Z4R7**	Electrolytic, 50V, 4.7μF
C210		ECKD1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$%
C211		ECKD1H103MD	Ceramic, 50V, 0.01μF, ± 20%
C212		**ECEA50Z4R7**	Electrolytic, 50V, 4.7μF
C213		ECQM1H223KZ	Polyester, 50V, 0.022μF, ± 10%
C214		**ECEA1HS100**	Electrolytic, 50V, 10μF
C215		ECKD1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$%
C301		ECQS1471JZ	Polyester, 125V, 470pF, ± 5%

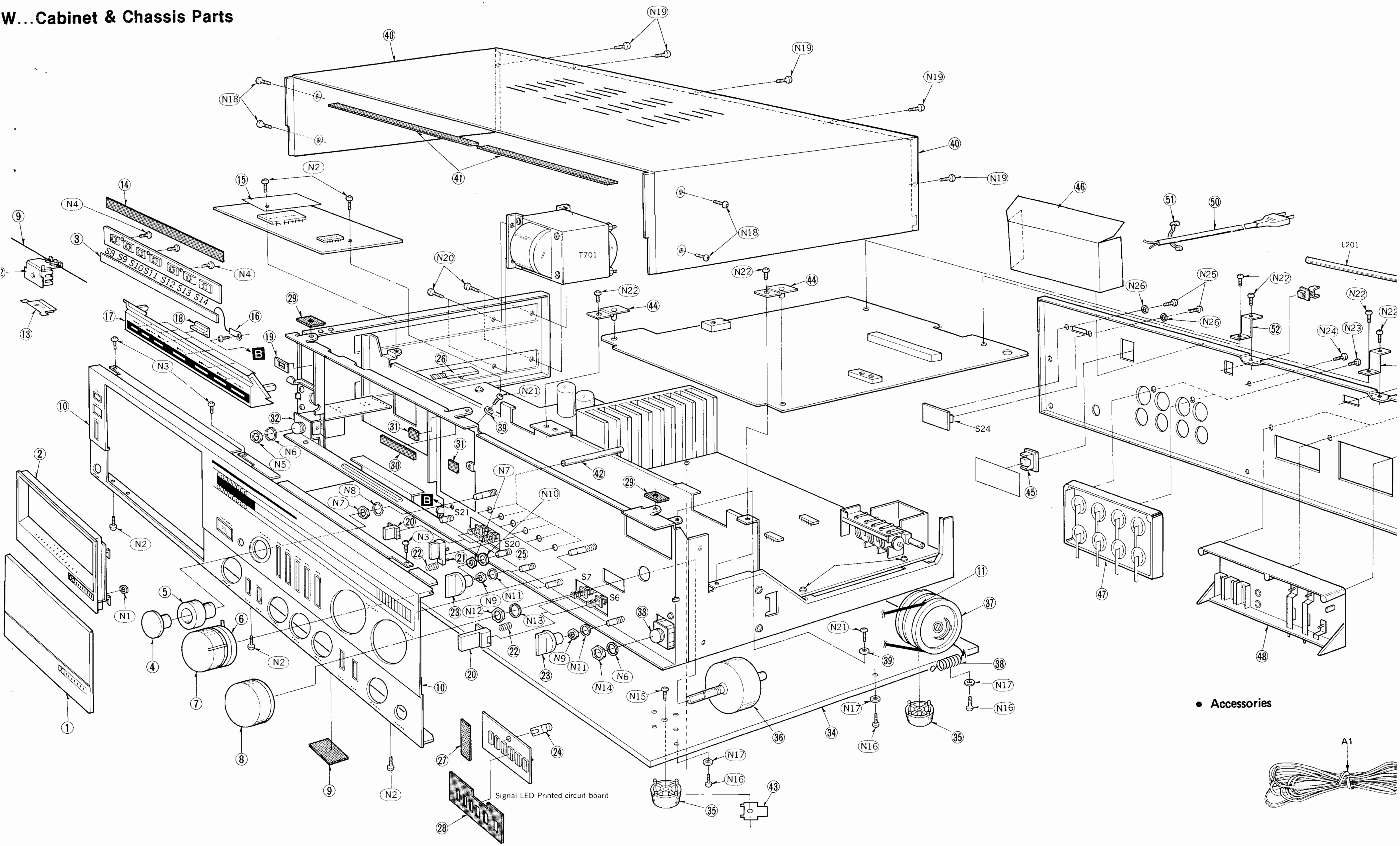
Ref. No.		Part No.	Part Name & Description
C302, 303		**ECEA50MR47R**	Electrolytic, 50V, 0.47μF
C304		ECQM1H473KZ	Polyester, 50V, 0.047μF, ± 10%
C305		**ECEA50MR47R**	Electrolytic, 50V, 0.47μF
C306		**ECEA50Z4R7**	Electrolytic, 50V, 4.7μF
C307		**ECEA1ES101**	Electrolytic, 50V, 100μF
C308, 309		ECQM1H333KZ	Polyester, 50V, 0.033μF, ± 10%
C310, 311		ECQM1H272JZ	Polyester, 50V, 0.0027μF, ± 5%
C312, 313		ECKD1H471KB	Ceramic, 50V, 470pF, ± 10%
C314, 315		**ECEA50MR22R**	Electrolytic, 50V, 0.22μF
C316		**ECEA1ES101**	Electrolytic, 25V, 100μF
C317		**ECEA50Z4R7**	Electrolytic, 50V, 4.7μF
C401, 402		**ECEA50M1R**	Electrolytic, 50V, 1μF
C403, 404		ECKD1H101KB	Ceramic, 50V, 100pF, ± 10%
C405, 406		**ECEA1CS330**	Electrolytic, 16V, 33μF
C407, 408		ECQM1H223KZ	Polyester, 50V, 0.022μF, ± 10%
C409, 410		ECQM1H682KZ	Polyester, 50V, 0.0068μF, ± 10%
C411, 412	⚠	**ECEA1HN010S**	Non-Polar Electrolytic, 50V, 1μF
C413, 414		**ECEA1ES101**	Electrolytic, 25V, 100μF
C419		**ECEA50Z1**	Electrolytic, 50V, 1μF
C420		ECKD1H102ZF	Ceramic, 50V, 0.001μF, +80 −20%
C421		ECCD1H101K	Ceramic, 50V, 100pF, ± 10%
C422		**ECEA1HS100**	Electrolytic, 50V, 10μF
C423		**ECEA1ES470**	Electrolytic, 25V, 47μF
C424, 425		**ECEA1ES101**	Electrolytic, 25V, 100μF
C431, 432		ECKD1H101KB	Ceramic, 50V, 100pF, ± 10%
C501, 502		**ECEA50Z1**	Electrolytic, 50V, 1μF
C503, 504		ECCD1H270K	Ceramic, 50V, 27pF, ± 10%
C505, 506		ECKD1H471KB	Ceramic, 50V, 470pF, ± 10%
C507, 508	⚠	**ECEA1HN3R3S**	Non-Polar Electrolytic, 50V, 3.3μF
C509, 510		ECQM1H563KZ	Polyester, 50V, 0.056μF, ± 10%
C601, 602		**ECEA50Z3R3**	Electrolytic, 50V, 3.3μF
C603, 604		ECCD1H390K	Ceramic, 50V, 39pF, ± 10%
C605, 606		ECCD1H101K	Ceramic, 50V, 100pF, ± 10%
C607, 608		ECCD1H020CC	Ceramic, 50V, 2pF, ±0.25pF
C609, 610		ECCD1H150K	Ceramic, 50V, 15pF, ± 10%
C611, 612		**ECEA1HS100**	Electrolytic, 50V, 10μF
C613, 614		ECCD1H330K	Ceramic, 50V, 33pF, ± 10%
C615, 616		ECKD1H681KB	Ceramic, 50V, 680pF, ± 10%
C617, 618		ECKD1H471KB	Ceramic, 50V, 470pF, ± 10%
C619, 620		ECCD1H330K	Ceramic 50V, 33pF, ± 10%
C621, 622		**ECEA1HS100**	Electrolytic, 50V, 10μF
C623, 624		ECQM1H272JZ	Polyester, 50V, 0.0027μF, ± 5%
C625, 626		ECQM1H223KZ	Polyester, 50V, 0.022μF, ± 10%
C627, 628		ECQM1H123KZ	Polyester, 50V, 0.012μF, ± 10%
C629, 630		ECQM1H683KZ	Polyester, 50V, 0.068μF, ± 10%
C631 ~ 634		ECCD1H101K	Ceramic, 50V, 100pF, ± 10%
C635, 636	⚠	**ECEA1HN3R3S**	Non-Polar Electrolytic, 50V, 3.3μF
C637, 638		**ECEA1HS100**	Electrolytic, 50V, 10μF
C639, 640		ECQM1H154KZ	Polyester, 50V, 0.15μF, ± 10%
C641		**ECEA1HS101**	Electrolytic, 50V, 100μF
C701, 702		ECET45R472SW	Electrolytic, 45V, 4700μF
C703, 704		**ECEA1HS100**	Electrolytic, 50V, 10μF
C705		ECKD1H223ZF	Ceramic, 50V, 0.022μF, +80 −20%
C706		**ECEA1VS102**	Electrolytic, 35V, 1000μF
C707		**ECEA1ES101**	Electrolytic, 25V, 100μF
C708		ECKD1H223ZF	Ceramic, 50V, 0.022μF, +80 −20%
C709		**ECEA1CS221**	Electrolytic, 16V, 220μF
C710		**ECEA1ES101**	Electrolytic, 25V, 100μF
C711		ECKD1H223ZF	Ceramic, 50V, 0.022μF, +80 −20%
C715		**ECEA1ES332**	Electrolytic, 25V, 3300μF
C718, 719		**ECEA1JS330**	Electrolytic, 63V, 33μF
C720		**ECEA50Z3R3**	Electrolytic, 50V, 3.3μF
C721		**ECEA1HS100**	Electrolytic, 50V, 10μF
C722		**ECEA1HS470**	Electrolytic, 50V, 47μF
C723		**ECEA1HS100**	Electrolytic, 50V, 10μF
C801		**ECEA1CS330**	Electrolytic, 16V, 33μF
C802		**ECEA1AS470**	Electrolytic, 10V, 47μF
C803 ~ 805		**ECEA1HS100**	Electrolytic, 50V, 10μF

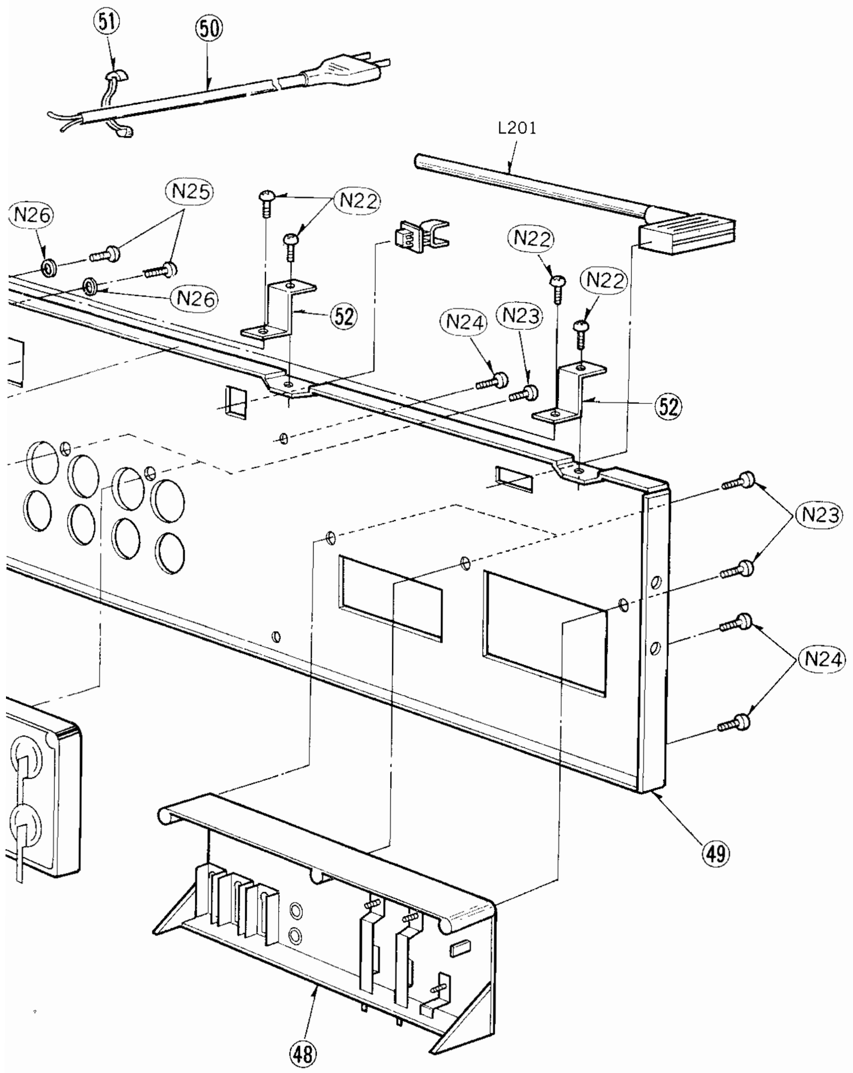
Ref. No.		Part No.	Part Name & Description
C806		**ECEA1ES470**	Electrolytic, 25V, 47μF
C807, 808		**ECEA1CS330**	Electrolytic, 16V, 33μF
C809		**ECEA1HS100**	Electrolytic, 50V, 10μF
C810		**ECEA50MR33R**	Electrolytic, 50V, 0.33μF
C811		**ECEA50Z1**	Electrolytic, 50V, 1μF
C812		**ECEA50MR47R**	Electrolytic, 50V, 0.47μF
C813, 814		**ECEA1HS100**	Electrolytic, 50V, 10μF
C815		ECQM1H103KZ	Polyester, 50V, 0.01μF, ± 10%
C816		**ECEA50Z4R7**	Electrolytic, 50V, 4.7μF
C817		**ECEA1HS100**	Electrolytic, 50V, 10μF
C818		**ECEA50Z4R7**	Electrolytic, 50V, 4.7μF
C819		**ECEA1CS330**	Electrolytic, 16V, 33μF
C820		**ECEA1AS101**	Electrolytic, 10V, 100μF
C821		**ECEA1ES101**	Electrolytic, 25V, 100μF
C823, 824		**ECEA1HS100**	Electrolytic, 50V, 10μF
C825 ~ 828		ECKD1H223ZF	Ceramic, 50V, 0.022μF, +80 −20%
C829		ECKD1H103ZF	Ceramic, 50V, 0.01μF, +80 −20%
C830		**ECEA1CS471**	Electrolytic, 16V, 470μF
C901, 902		ECQM1H102JZ	Polyester, 50V, 0.001μF, ± 5%
C903, 904		**ECEA16M10R**	Electrolytic, 16V, 10μF
C905, 906		ECKD1H102ZF	Ceramic, 50V, 0.001μF, +80 −20%
C907, 908		**ECEA1HS100**	Electrolytic, 50V, 10μF
C909, 910		ECQM1H123JZ	Polyester, 50V, 0.012μF, ± 5%
C911, 912		**ECEA50Z1**	Electrolytic, 50V, 1μF
C913		**ECEA1ES221**	Electrolytic, 25V, 220μF
C914		**ECEA1CS221**	Electrolytic, 16V, 220μF
C915		**ECEA1AS221**	Electrolytic, 10V, 220μF
C916		**ECEA1ES101**	Electrolytic, 25V, 100μF
C917, 918		ECQM1H273JZ	Polyester, 50V, 0.027μF, ± 5%
C919, 920		ECQM1H472JZ	Polyester, 50V, 0.0047μF, ± 5%
C921, 922		**ECEA1HS100**	Electrolytic, 50V, 10μF
C923, 924		ECQM1H562JZ	Polyester, 50V, 0.0056μF, ± 5%
C925, 926		**ECEA1HS100**	Electrolytic, 50V, 10μF
C927, 928		**ECEA50MR33R**	Electrolytic, 50V, 0.33μF
C929, 930		**ECEA1HS100**	Electrolytic, 50V, 10μF
C931, 932		ECQM1H102JZ	Polyester, 50V, 0.001μF, ± 5%
C933, 934		**ECEA50MR33R**	Electrolytic, 50V, 0.33μF
C935, 936		**ECEA50ZR1**	Electrolytic, 50V, 0.1μF
C937, 938		**ECEA1HS100**	Electrolytic, 50V, 10μF
C939, 940		ECQM1H473JZ	Polyester, 50V, 0.047μF, ± 5%
C941, 942		ECQM1H104KZ	Polyester, 50V, 0.1μF, ± 10%
C943, 944		**ECEA50Z1**	Electrolytic, 50V, 1μF
C945, 946		ECCD1H101K	Ceramic, 50V, 100pF, ± 10%
C947, 948		**ECEA1HS100**	Electrolytic, 50V, 10μF
C949, 950		ECQM1H332JZ	Polyester, 50V, 0.0033μF, ± 5%
C951, 952		ECQM1H153JZ	Polyester, 50V, 0.015μF, ± 5%
C953, 954		ECQM1H333JZ	Polyester, 50V, 0.033μF, ± 5%
C955, 956		ECQM1H563JZ	Polyester, 50V, 0.056μF, ± 5%
C957, 958		ECQM1H472JZ	Polyester, 50V, 0.0047μF, ± 5%
C959, 960		ECQM1H683JZ	Polyester, 50V, 0.068μF, ± 5%
C961, 962		ECQM1H183JZ	Polyester, 50V, 0.018μF, ± 5%
C963, 964		ECQM1H102KZ	Polyester, 50V, 0.001μF, ± 10%
C965, 966		ECQM1H102JZ	Polyester, 50V, 0.001μF, ± 5%
C967, 968		ECQP1391JZ	Polyester, 125V, 390pF, ± 5%
C969, 970		ECCD1H221KC	Ceramic, 50V, 220pF, ± 10%
C971, 972		**ECEA50Z1**	Electrolytic, 50V, 1μF
C973		**ECEA1CS330**	Electrolytic, 16V, 33μF
C974		ECKD1H223ZF	Ceramic, 50V, 0.022μF, +80 −20%
C975		**ECEA1HS100**	Electrolytic, 50V, 10μF
C976		**ECEA1ES101**	Electrolytic, 25V, 100μF
C977, 978		ECCD1H101K	Ceramic, 50V, 100pF, ± 10%
C979, 980		**ECEA50Z4R7**	Electrolytic, 50V, 4.7μF
C990		ECQP1561JZ	Polyester, 125V, 560pF, ± 5%
C991, 992		**ECEA1HS100**	Electrolytic, 50V, 10μF
C993		**ECEA1ES101**	Electrolytic, 25V, 100μF
C1001	⚠	ECKDKC103PF	Ceramic, 400VAC, 0.01μF, +100 −0%

■ EXPLODED VIEW...Cabinet & Chassis Parts

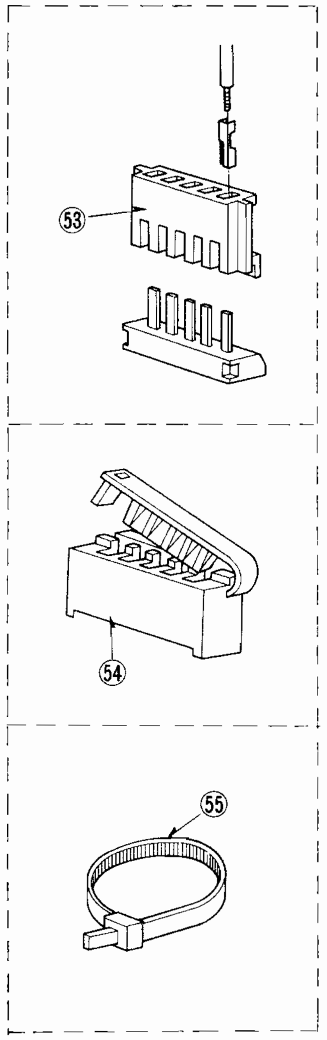


W...Cabinet & Chassis Parts


N19
40
N19
N19
N18
40
N19
41
N18
N2
15
14
N4
9
3
S8 S9 S10 S11 S12 S13 S14
N4
13
17
18
16
19
B
N3
10
2
1
N1
5
4
6
7
N2
8
9
N2
27
28
24
Signal LED Printed circuit board
N20
T701
29
26
N21
39
32
N6
N5
31
30
31
42
29
N7
N8
N7
B
S21
20
N10
N3
22
21
S20
25
S7
S6
23
N12
N9
N11
N13
22
20
23
N9
N11
N14
N6
33
N22
44
N22
44
11
37
N21
39
38
N17
N16
N15
N17
N16
36
34
35
N17
N16
35
43
46
51
50
L201
N26
N25
N22
N26
52
N22
N24
N23
N22
S24
45
47
48
• Accessories
A1



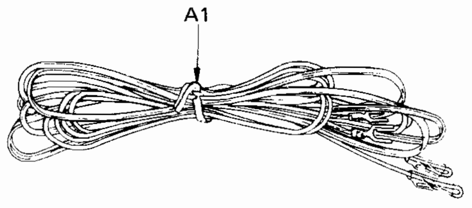
- **Lead wire connector and clamper**

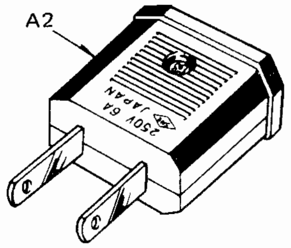


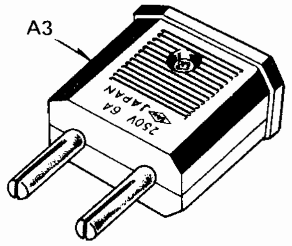
Areas

- * [EX] is available in Switzerland and Scandinavia.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [EB] is available in Belgium.

- **Accessories**







■ REPLACEMENT PARTS LIST...Cabinet & Chassis Parts

Notes:

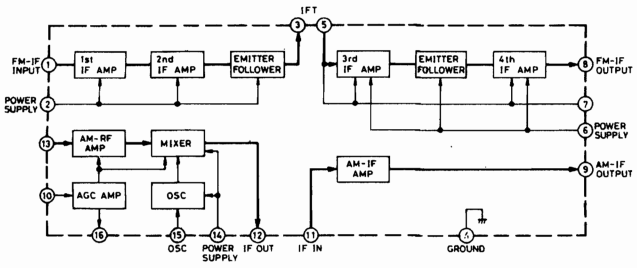
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety Notice:
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ -marked parts are used for black only, while ○-marked parts are for silver type only.
4. Parts other than Ⓚ - and ○-marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type Model No. : SA-R30 (K)

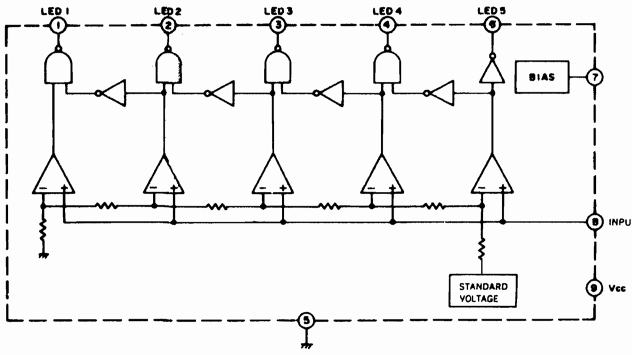
Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1	○	SGUAR30N	Cassette Lid
1	Ⓚ	SGUAR30KX	Cassette Lid (Black)
2		SGXAR30N	Cassette Lid, Holding Plate
3		SJEK10	Copper Collar
4		SBNK29	Knob, REC (R)
5		SBNK28	Knob, REC (L)
6		SBNK36	Knob, Balance
7		SBNK37	Knob, Volume
8		SBNK31	Knob, Tuning
9		SHEK3	Bottom, Board Varia
10	○	SYWK100	Panel, Front Ass'y
10	Ⓚ	SYWK120	Panel, Front Ass'y (Black)
11		SDZ051–2	Cord Dial 180 cm
12		SDAK4	Pointer Dial
13		SDAK5	Slider Dial Pointer
14		SHSK145	Fiber
15		SMXK19	Power Source Switch Cover
16		RJT202B	Ground, Lug
17	○	SGXK32	Cassette Button Board
17	Ⓚ	SGXK32–1	Cassette Button Board (Black)
18		SBCK20	Button, Recmute, Pause, ff, Plag, Stop, Rew, Rec
19	○	SHRK911	Timer, Switch Cover
19	Ⓚ	SHRK911–1	Timer, Switch Cover (Black)
20		SBCK21	Button, TPS, Dolby NR, Loudness FM Muting/Mode, Eject
21		SBCK19	Button, Power, Input Selector
22		SUS159	Spring, TPS, Dolby NR, Loudness, FM Muting/Mode, Eject
23		SBNK27	Knob, Mic Mixing, Speaker Select Treble, Bass, Tape Selector
24		SHRK908	Latch, Signal Indicator P.C.B. M'tg
25		SSRK11	Wire Remote Control Speaker Select
26		SSWK3	Cord Speaker Select
27		SHSK146	Fiber, Dial Signal Indicator
28		SHGK440	Fiber, Signal Indicator
29		SHP643	Spacer Panel Front
30		SUDK5–1	Spacer, Tape Level P.C.B.
31		SHGK460	Spacer, Tape Level P.C.B.
32		SJJK16	Jack, Headphone
33		SJJK14	Jack, Microphone
34		SYUK3–2	Bottom Board
35		SKL181–1	Foot, Set
36		SDTK8002	Shaft Tuning
37		SDD9021	Drum, Variable Capacitor
38		SDSA4121	Spring, Drum
39		SDR3	Pulley, Dial Cord
40	○	SKCK50S1	Cabinet
40	Ⓚ	SKCK50B1	(Cabinet (Black)
41		SHS2437	Fiber, Cabinet
42		SUBK4	Switche, Connector
43		SUWK220	Bracket, RF P.C.B.
44		SMEK8	Hinge, Cassette P.C.B. M'tg
45 [XA]	⚠	SJSA66–2	Socket, AC Outlet
46		SMXK21	Fuse, P.C.B. Cover
47		SJF4813–1	Terminal, Speakers
48		SJF8015–3	Terminal, Antenna and Input
49		SGPK90–2A	Rear Panel
49 [XA]		SGPK90–3A	Rear Panel
50	⚠	**SJA88**	AC Cord
50 [XA]	⚠	SJA111	AC Cord
51		SHR127	Bushing, AC Cord
52		SMWK4	Bracket, Cassette P.C.B.
53		SJS5213	Socket, 2 Pin
53		SJS5323	Socket, 3 Pin
53		SJS5417	Socket, 4 Pin
53		SJS5621	Socket, 6 Pin
53		SJS5905	Socket, 9 Pin
54		SJS5421	Connector, Lead Wire, 4 Pin
54		SJS5707	Connector, Lead Wire, 7 Pin
54		SJS5807	Connector, Lead Wire, 8 Pin
SCREWS, NUT and WASHERS			
N1		**XNG3ES**	Nut M3
N2		**XTB3+8BFN**	Screw, Tapping ⊕ 3 x 8
N3		**XTS3+6B**	Screw, Tapping ⊕ 3 x 6
N4		**XTN26+6B**	Screw, Tapping ⊕ 2.6 x 6
N5		**XNS12**	Nut, M12
N6		SNE59–1	Washer, Spring, ϕ12
N7		**XNS9**	Nut, M9 Volume, Recording Speaker Selector
N8		**XWC9B**	Washer, Spring, ϕ9 Volume, Recording
N9		**XNS8**	Nut, M8
N10		**XWA9B**	Washer, Spring, ϕ9 Speaker, Selector
N11		**XWV8**	Washer, Spring, ϕ8
N12		**XNS11**	Nut, M11
N13		**XWV11**	Washer, Spring, ϕ11
N14		**XNS12**	Nut, M12
N15		**XTB3+10BFN**	Screw, Tapping ⊕ 3 x 10
N16		**XTN3+10B**	Screw, Tapping ⊕ 3 x 10
N17		**XWG3**	Washer, Spring, ϕ3
N18	○	**XTB4+8BFN**	Screw, Tapping ⊕ 4 x 8
N18	Ⓚ	**XTB4+8BFZ**	Screw, Tapping ⊕ 4 x 8 (Black)
N19	○	**XTB3+8BFN**	Screw, Tapping ⊕ 3 x 8
N19	Ⓚ	**XTB3+8BFZ**	Screw, Tapping ⊕ 3 x 8 (Black)
N20		XYA4+FF10BZ	Screw ⊕ 4 x 10
N21		SHD3X21F–1	Screw ⊕ 3 x 21
N22		**XTB3+6BFN**	Screw, Tapping ⊕ 3 x 6
N23		**XTB3+10BFZ**	Screw, Tapping ⊕ 3 x 10
N24		XTBS3+8BFZ1	Screw, Tapping ⊕ 3 x 8
N25		**XSN26+5FZ**	Screw, Tapping ⊕ 2.6 x 5
N26		**XWA26BFZ**	Washer, Spring, ϕ2.6
N27		XTB26+5FFZ	Screw, Tapping ⊕ 2.6 x 5
N28		SHD3X1F–1	Screw
N29		**XTS3+8B**	Screw, Tapping ⊕ 3 x 8
N30		**XSN26+5**	Screw, Tapping ⊕2.6 x 5
N31		**XUC4FT**	Circlip, ϕ4
N32		**XUC3FT**	Circlip, ϕ3
ACCESSORY			
A1		SSA267	Cord, FM Indoor, Antenna
A2 [XA] only	⚠	SJP5213–1	Plug Adaptor, Power Source
A2 [XA] only	⚠	SJP5215	Plug Adaptor, Power Source
A3 [XA] only		SPB1065	Plug Bag
PACKING PARTS			
P1		SPGK69	Carton Box
P1 [XA] only		SPGK74	Carton Box
P2		SPSK22–2	Pad, Front Side
P3		SPSK23–1	Pad, Rear
P4		SPJ15	AC, Cord Polyethylene Bag
P5		SPPK39	Polyethylene Bag
P6 [EX,XA] only		SGK1413	Carton Box, Black Lebel
P7		SQFK5035	Instructions Book, Printed Matter
P7 [XA] only		SQFK5036	Instructions Book, Printed Matter

• Block diagram of IC's (SCHEMATIC DIAGRAM Ⓐ)

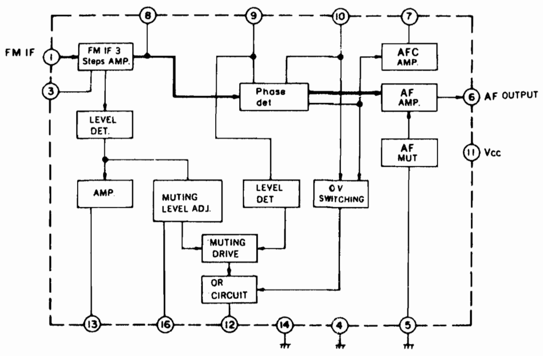
This is the basic block diagram of the inside circuit of IC. In an actual circuit, there may be sometimes idle terminals or some different functions other than the basic circuit.


IFT
FM-IF INPUT
1st IF AMP
2nd IF AMP
EMITTER FOLLOWER
3rd IF AMP
EMITTER FOLLOWER
4th IF AMP
FM-IF OUTPUT
POWER SUPPLY
POWER SUPPLY
AM-RF AMP
MIXER
AM-IF AMP
AM-IF OUTPUT
AGC AMP
OSC
OSC
POWER SUPPLY
IF OUT
IF IN
GROUND

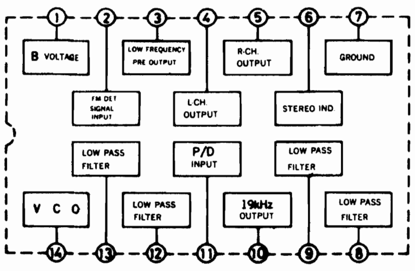
IC101
AN217P
FM-IF AMP. & FM DETECTOR


LED 1
LED 2
LED 3
LED 4
LED 5
BIAS
INPUT
STANDARD VOLTAGE
Vcc

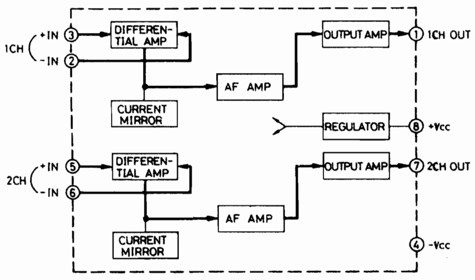
IC103
AN6876
LED DRIVER


FM IF
FM IF 3 Steps AMP.
Phase det
AFC AMP.
AF AMP.
AF OUTPUT
LEVEL DET.
AF MUT
Vcc
AMP.
MUTING LEVEL ADJ.
LEVEL DET
OV SWITCHING
MUTING DRIVE
OR CIRCUIT

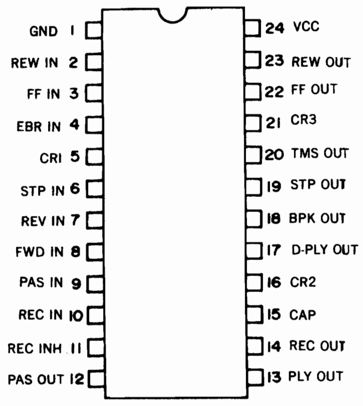
IC102
SVIUPC1167C
FM-IF AMPLIFIER & FM CONVERTER


B VOLTAGE
LOW FREQUENCY PRE OUTPUT
R-CH. OUTPUT
GROUND
FM DET SIGNAL INPUT
L-CH. OUTPUT
STEREO IND.
LOW PASS FILTER
P/D INPUT
LOW PASS FILTER
V C O
LOW PASS FILTER
19kHz OUTPUT
LOW PASS FILTER

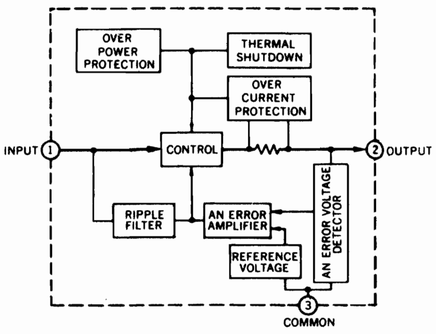
IC301
SVIHA1156W
FM MPX


1CH
+IN
-IN
DIFFEREN-TIAL AMP
OUTPUT AMP
1CH OUT
AF AMP
CURRENT MIRROR
REGULATOR
+Vcc
2CH
+IN
-IN
DIFFEREN-TIAL AMP
OUTPUT AMP
2CH OUT
AF AMP
CURRENT MIRROR
-Vcc

IC401
SVINJM4559DD
EQUALIZER AMP.

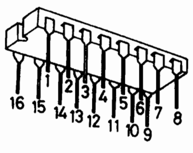
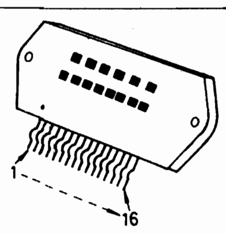
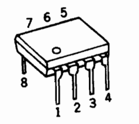
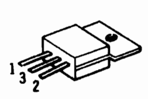
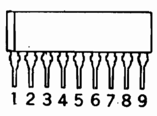
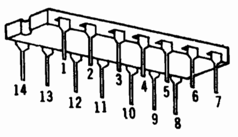

GND 1
REW IN 2
FF IN 3
EBR IN 4
CRI 5
STP IN 6
REV IN 7
FWD IN 8
PAS IN 9
REC IN 10
REC INH 11
PAS OUT 12
24 VCC
23 REW OUT
22 FF OUT
21 CR3
20 TMS OUT
19 STP OUT
18 BPK OUT
17 D-PLY OUT
16 CR2
15 CAP
14 REC OUT
13 PLY OUT

IC801
AN6251
LOGIC CONTROL

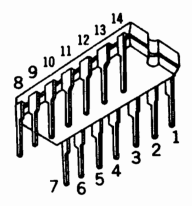
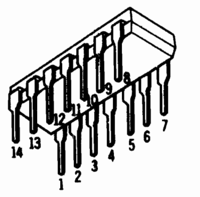
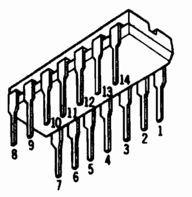
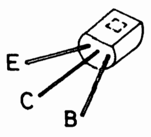
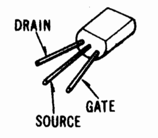
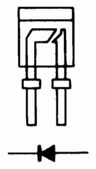
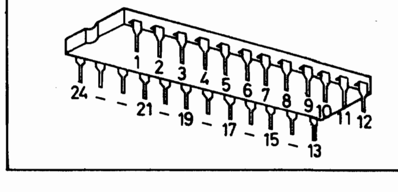
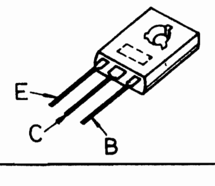
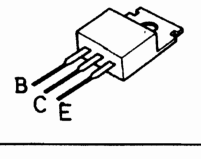
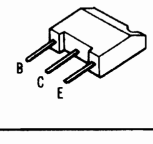
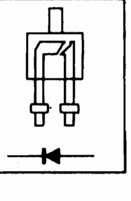

OVER POWER PROTECTION
THERMAL SHUTDOWN
OVER CURRENT PROTECTION
INPUT
CONTROL
OUTPUT
RIPPLE FILTER
AN ERROR AMPLIFIER
REFERENCE VOLTAGE
AN ERROR VOLTAGE DETECTOR
COMMON

IC803
SVIFS7805C
REGULATOR

• Terminal guide of transistors, diodes and IC's

AN217, SVIUPC1167, SVINE646	SVISTK2082	SVINJM4559
		
SVIFS7805	AN6876, AN7060	SVIHA1156
		

16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
1
16
7 6 5
8
1 2 3 4
1 3 2
1 2 3 4 5 6 7 8 9
14 13 12 11 10 9 8
1 2 3 4 5 6 7

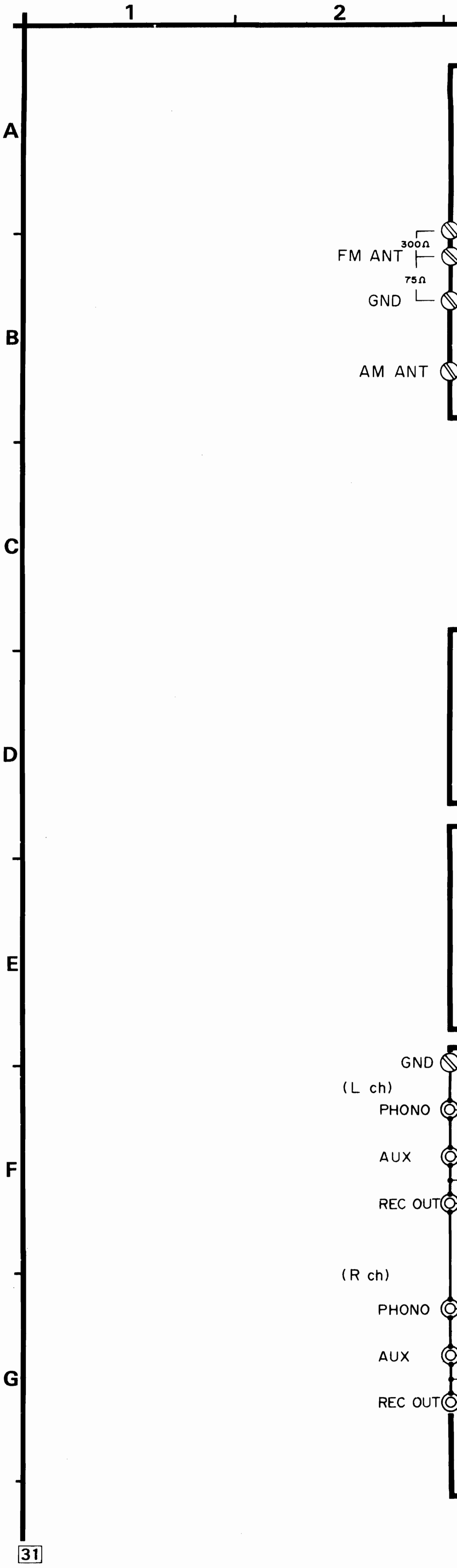
SVILB1416	SVILM324	SVIM53206	2SA1123, 2SA1015, 2SD592, 2SC1815	2SK61	SVDTLR205, SVDTLG205
					
AN6251		2SD793	2SD762	2SC2377, 2SC2206, 2SD636, 2SB745, 2SB641, 2SD661, 2SD637	LN222RP, LN222GP
					

8 9 10 11 12 13 14
7 6 5 4 3 2 1
14 13 12 11 10 9 8
1 2 3 4 5 6 7
8 9 10 11 12 13 14
7 6 5 4 3 2 1
E C B
DRAIN
SOURCE
GATE
1 2 3 4 5 6 7 8 9 10 11 12
24 21 19 17 15 13
E C B
B C E
B C E

■ SCHEMATIC DIAGRAM Ⓐ

(A , B and C P.C.B.) . . .

MODEL SA-R30


1
2
A
B
C
D
E
F
G
300Ω
FM ANT
75Ω
GND
AM ANT
GND
(L ch)
PHONO
AUX
REC OUT
(R ch)
PHONO
AUX
REC OUT

AGRAM Ⓐ

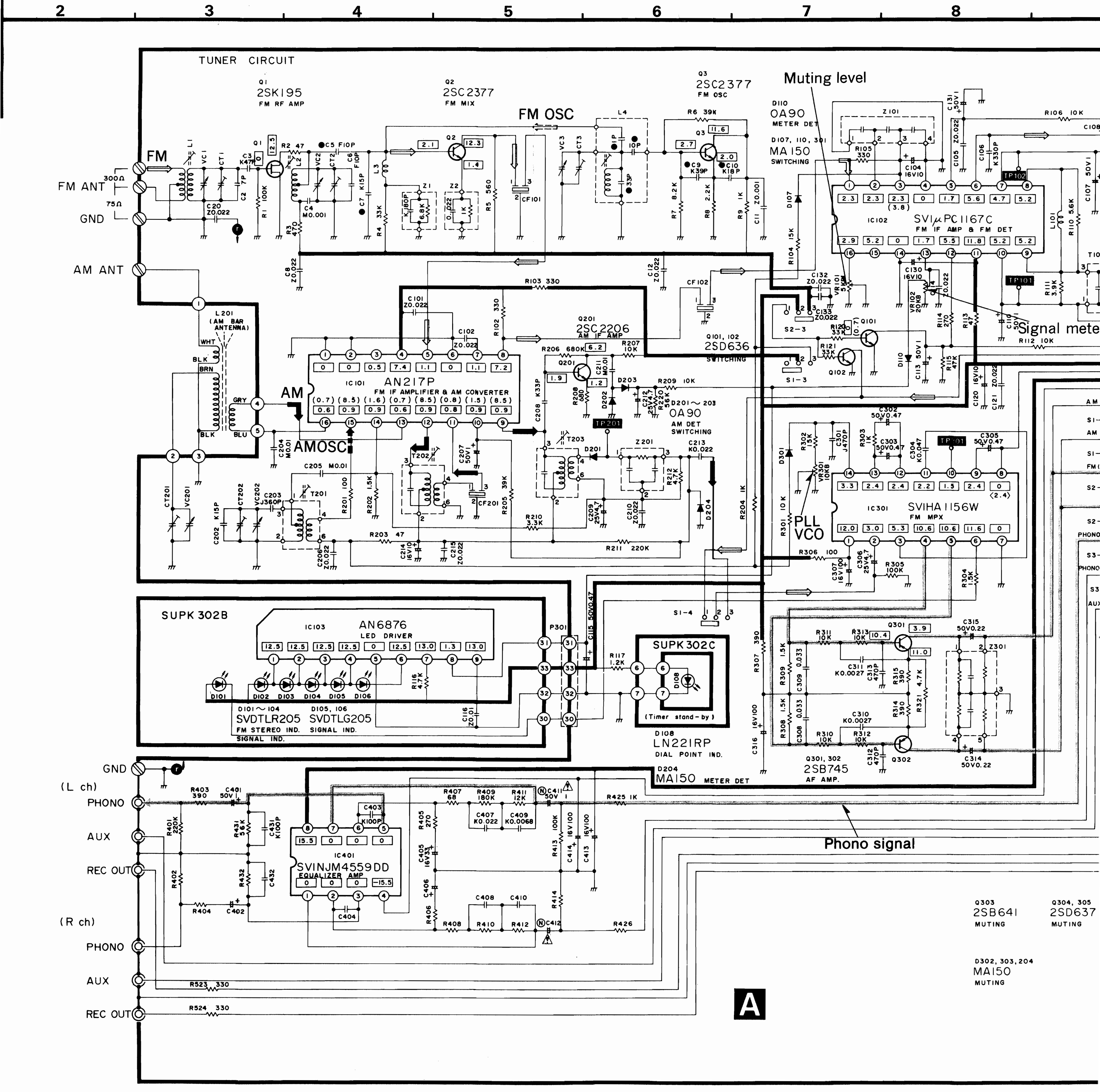
...

30

Notes:

1. **S1 ～ S5**: Input selector switch in **"FM"** position.
   - S1-1 ～ S1-5: AM, S2-1 ～ S2-4: FM
   - S3-1 ～ S3-3: Phono, S4-1 ～ S4-3: Aux
   - S5-1 ～ S5-4: Tape
2. **S8** : Rec switch in **"on"** position.
3. **S9** : Rewind switch in **"off"** position.
4. **S10** : Stop switch in **"off"** position.
5. **S11** : Playback switch in **"on"** position.
6. **S12** : Fast-forward switch in **"off"** position.
7. **S13** : Pause switch in **"off"** position.
8. **S14** : Rec mute switch in **"off"** position.
9. **S15** : Timer stand by switch in **"off"** position.
   rec ↔ off ↔ play
10. **S16** : Accidental recording prevention switch in **"off"** position.
11. **S17** : Cassette half detection switch in **"off"** position.
12. Indicated voltage values are the standard values for the DC electronic circuit tester (high impedance) with chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
    ▭ Voltage in FM (mono-signal) mode.
    < > Voltage in FM (stereo-signal) mode.
    ( ) Voltage in AM mode.
13. ⇨ FM signal ⇨ Audio frequency signal
    ➡ AM signal ▬ Positive voltage line

14. Important safety n
Components ident
important for safe
use only manufact



2
3
4
5
6
7
8
TUNER CIRCUIT
Q1 2SK195 FM RF AMP
Q2 2SC2377 FM MIX
Q3 2SC2377 FM OSC
FM OSC
Muting level
D110 OA90 METER DET
D107, 110, 301 MA150 SWITCHING
FM
FM ANT
300Ω
75Ω
GND
AM ANT
L201 (AM BAR ANTENNA)
WHT
BLK
BRN
GRY
BLU
AM
AMOSC
IC101 AN217P FM IF AMPLIFIER & AM CONVERTER
IC102 SVIμPC1167C FM IF AMP & FM DET
TP102
TP101
Q101, 102 2SD636 SWITCHING
Q201 2SC2206 AM IF AMP
D201～203 OA90 AM DET SWITCHING
TP201
Signal meter
IC301 SVIHA1156W FM MPX
TP301
PLL VCO
S2-3
S1-3
S1-4
SUPK302B
IC103 AN6876 LED DRIVER
D101～104 SVDTLR205 FM STEREO IND. SIGNAL IND.
D105, 106 SVDTLG205 SIGNAL IND.
SUPK302C
D108 (Timer stand-by)
D108 LN221RP DIAL POINT IND.
D204 MA150 METER DET
Q301, 302 2SB745 AF AMP.
Z301
GND
(L ch)
PHONO
AUX
REC OUT
(R ch)
PHONO
AUX
REC OUT
IC401 SVINJM4559DD EQUALIZER AMP
Phono signal
Q303 2SB641 MUTING
Q304, 305 2SD637 MUTING
D302, 303, 204 MA150 MUTING
A

14. Important safety notice:
Components identified by ⚠ make have special characteristics important for safety. When replacing any of thesse components, use only manufacturer's specified parts.

- **Relationship of each operation mode with output (AN6251)**

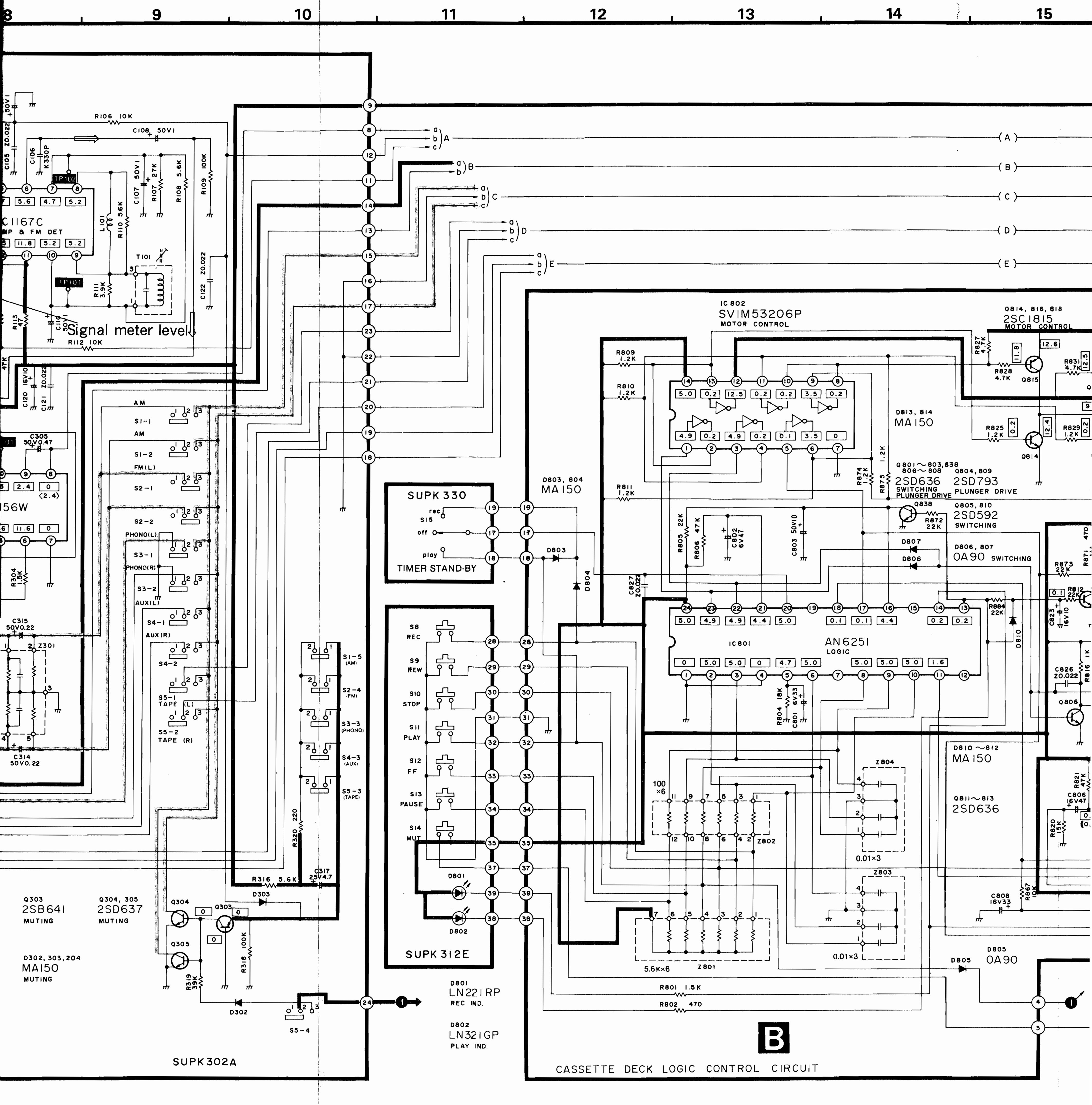
Output / Mode	㉒	㉓	⑬	⑰	⑫	⑲	⑭	⑯
	FF	REW	PLY	D-PLY	PAS	STP	REC	BRK
PLAY	"H"	"H"	"L"	"L"★	"H"	"H"	"H"	"L"

★ Delay

Output / Mode	㉒	㉓	⑬	⑰	⑫	⑲	⑭	⑯
	FF	REW	PLY	D-PLY	PAS	STP	REC	BRK
REC	"H"	"H"	"H"	"H"	"H"	"H"	"L"	"H"

Output / Mode	㉒	㉓	⑬	⑰	⑫	⑲
	FF	REW	PLY	D-PLY	PAS	ST
FF	"L"	"H"	"H"	"H"	"H"	"H

Output / Mode	㉒	㉓	⑬	⑰	⑫	⑲
	FF	REW	PLY	D-PLY	PAS	ST
REW	"H"	"L"	"H"	"H"	"H"	"H


8
9
10
11
12
13
14
15
R106 10K
C108 50V1
C105 Z0.022
C106 K330P
TP102
C107 50V1
R107 27K
R108 5.6K
R109 100K
5.6
4.7
5.2
C1167C
MP & FM DET
11.8
5.2
5.2
L101
R110 5.6K
T101
TP101
R111 3.9K
C122 Z0.022
R113 47
C110 50V1
Signal meter level
R112 10K
47K
C120 16V10
C121 Z0.022
C305 50V0.47
2.4
0
(2.4)
156W
11.6
0
R304 1.5K
C315 50V0.22
Z301
C314 50V0.22
AM
S1-1
AM
S1-2
FM(L)
S2-1
S2-2
PHONO(L)
S3-1
PHONO(R)
S3-2
AUX(L)
S4-1
AUX(R)
S4-2
S5-1 TAPE (L)
S5-2 TAPE (R)
S1-5 (AM)
S2-4 (FM)
S3-3 (PHONO)
S4-3 (AUX)
S5-3 (TAPE)
R320 220
R316 5.6K
C317 25V4.7
D303
Q304
Q303
Q305
R318 100K
R319 39K
D302
S5-4
Q303 2SB641 MUTING
Q304, 305 2SD637 MUTING
D302, 303, 204 MA150 MUTING
SUPK302A
A
B
C
D
E
SUPK 330
rec S15 off play
TIMER STAND-BY
SUPK 312E
S8 REC
S9 REW
S10 STOP
S11 PLAY
S12 FF
S13 PAUSE
S14 MUT
D801
D802
D801 LN221RP REC IND.
D802 LN321GP PLAY IND.
D803, 804 MA150
D803
D804
IC 802 SVIM53206P MOTOR CONTROL
R809 1.2K
R810 1.2K
R811 1.2K
5.0
0.2
12.5
0.2
0.2
3.5
0.2
4.9
0.2
4.9
0.2
0.1
3.5
0
D813, 814 MA150
R874 1.2K
R875 1.2K
Q814, 816, 818 2SC1815 MOTOR CONTROL
R827 4.7K
R828 4.7K
11.8
12.6
Q815
R831 4.7K
12.5
R825 1.2K
0.2
12.4
R829 1.2K
0.2
Q814
Q801~803, 838 806~808 2SD636 SWITCHING PLUNGER DRIVE
Q804, 809 2SD793 PLUNGER DRIVE
Q838
R872 22K
Q805, 810 2SD592 SWITCHING
D807
D806
D806, 807 OA90 SWITCHING
R805 22K
R806 47K
C802 6V47
C803 50V10
C827 Z0.022
IC801
AN6251 LOGIC
5.0
4.9
4.9
4.4
5.0
0.1
0.1
4.4
0.2
0.2
0
5.0
5.0
0
4.7
5.0
5.0
5.0
5.0
1.6
R884 22K
D810
R873 22K
R871 470
R812 22K
0.1
C823 16V10
C826 Z0.022
R816 1K
Q806
R804 18K
C801 6V33
100 ×6
Z802
Z804
0.01×3
Z803
0.01×3
5.6K×6
Z801
D810~812 MA150
Q811~813 2SD636
R821 47K
C806 16V47
R820 15K
C808 16V33
R867 10K
D805
D805 OA90
R801 1.5K
R802 470
B
CASSETTE DECK LOGIC CONTROL CIRCUIT

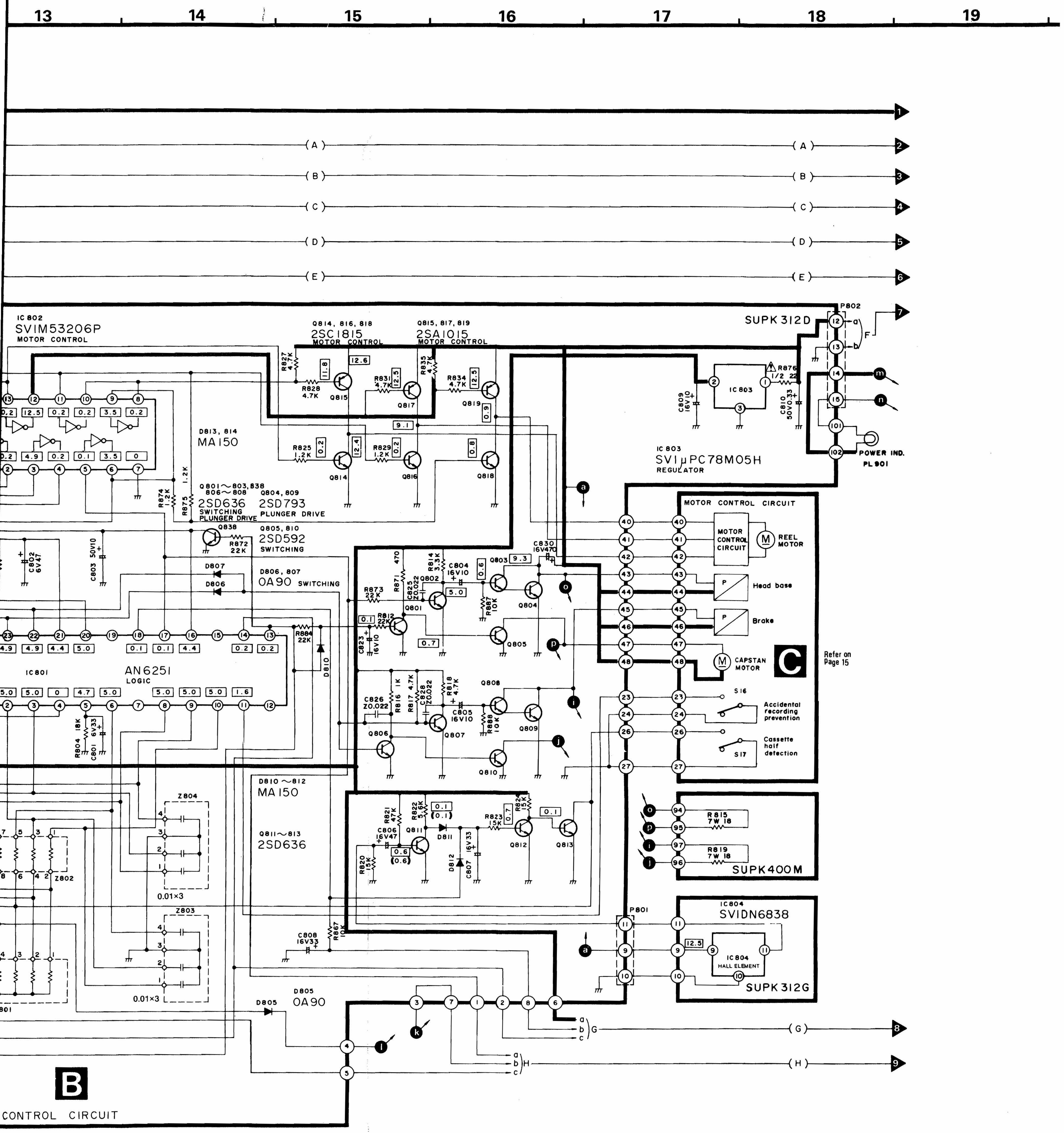
	⑱
EC	BRK
	"L"

	⑱
EC	BRK
	"H"

Output / Mode	㉒ FF	㉓ REW	⑬ PLY	⑰ D-PLY	⑫ PAS	⑲ STP	⑭ REC	⑱ BRK
FF	"L"	"H"	"H"	"H"	"H"	"H"	"H"	"L"

Output / Mode	㉒ FF	㉓ REW	⑬ PLY	⑰ D-PLY	⑫ PAS	⑲ STP	⑭ REC	⑱ BRK
REW	"H"	"L"	"H"	"H"	"H"	"H"	"H"	"L"

Output / Mode	㉒ FF	㉓ REW	⑬ PLY	⑰ D-PLY	⑫ PAS	⑲ STP	⑭ REC	⑱ BRK
STOP	"H"	"H"	"H"	"H"	"H"	"L"	"H"	"H"
PAUSE	"H"	"H"	"H"	"H"	"L"	"H"	"H"	"H"



13
14
15
16
17
18
19
IC 802
SVIM53206P
MOTOR CONTROL
Q814, 816, 818
2SC1815
MOTOR CONTROL
Q815, 817, 819
2SA1015
MOTOR CONTROL
SUPK312D
P802
F
IC 803
SVIμPC78M05H
REGULATOR
POWER IND.
PL901
D813, 814
MA150
Q801～803, 838
806～808
2SD636
SWITCHING
PLUNGER DRIVE
Q804, 809
2SD793
PLUNGER DRIVE
Q805, 810
2SD592
SWITCHING
D806, 807
OA90 SWITCHING
IC801
AN6251
LOGIC
MOTOR CONTROL CIRCUIT
MOTOR CONTROL CIRCUIT
REEL MOTOR
Head base
Brake
CAPSTAN MOTOR
C
Refer on Page 15
S16
Accidental recording prevention
S17
Cassette half detection
D810～812
MA150
Q811～813
2SD636
SUPK400M
R815 7W 18
R819 7W 18
P801
IC804
SVIDN6838
IC804 HALL ELEMENT
SUPK312G
Z804
Z803
Z802
0.01×3
D805
OA90
G
H
B
CONTROL CIRCUIT

SCHEMATIC DIAGRAM Ⓑ

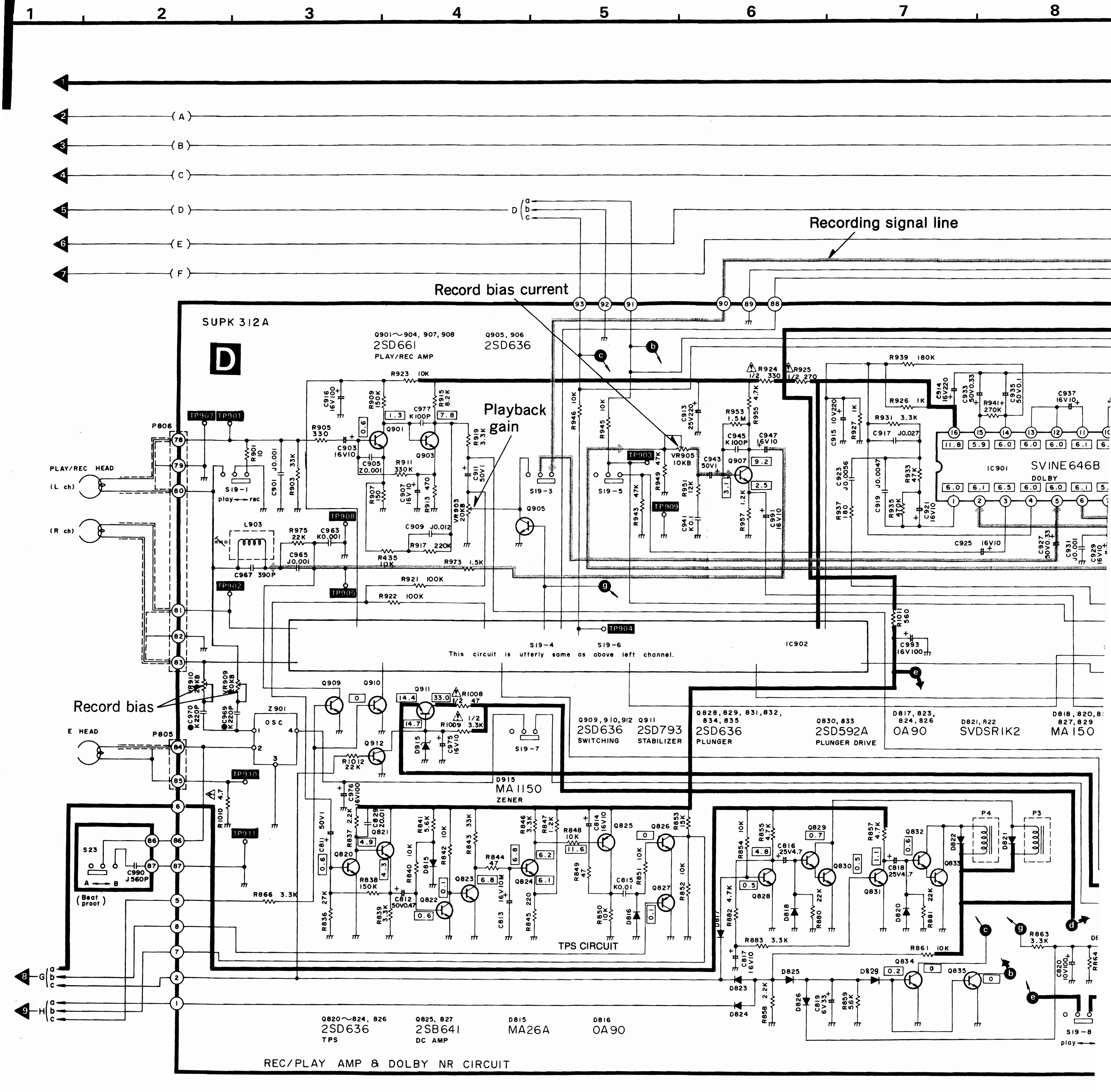
(D, E, F and G P.C.B.) . . .

MODEL SA-R30

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

1. **S6** : FM muting/FM mode switch in **"off/mono"** position.
2. **S7** : Loudness switch in **"off"** position.
3. **S19-1～S19-7** : Rec/Playback selector switch (Plunger) in **"Rec"** position.
4. **S20-1～S20-2** : Dolby NR switch in **"on"** position.
5. **S21** : TPS switch in **"on"** position.
6. **S22-1～S22-5** : Tape selector switch in **"normal"** position.
   normal ↔ CrO_2 ↔ metal
7. **S23** : Beat proof switch in **"A"** position
   A ↔ B
8. **S24** : Power switch in **"on"** position.
9. **S25** : Speaker selector switch in **"main and remote"** position.
   off ↔ remote ↔ main ↔ main and remote
10. **S26** : Voltage selector switch in "**240V**" position.
   120V ←→ 110V ←→ 220V ←→ 240V
11. Indicated voltage values are the standard values for the DC electronic circuit tester (high impedance) with chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
12. Signal lines
   ▨ Audio frequency signal and recording signal lines ▬ Positive voltage lines



1
2
3
4
5
6
7
8
(A)
(B)
(C)
(D)
(E)
(F)
D a b c
Recording signal line
Record bias current
Playback gain
Record bias
SUPK 312A
D
Q901～904, 907, 908
2SD661
PLAY/REC AMP
Q905, 906
2SD636
P806
PLAY/REC HEAD
(L ch)
(R ch)
E HEAD
P805
TP907
TP901
TP902
TP903
TP904
TP905
TP908
TP909
TP910
TP911
S19-1
play ← → rec
S19-3
S19-5
S19-4
S19-6
S19-7
S19-8
L903
VR903 20KB
VR905 10KB
VR910 20KB
VR909 20KB
IC901
SVINE646B
DOLBY
IC902
This circuit is utterly same as above left channel.
Z901
OSC
S23
A ← → B
(Beat proof)
C990 J560P
Q909, 910, 912
2SD636
SWITCHING
Q911
2SD793
STABILIZER
Q828, 829, 831, 832, 834, 835
2SD636
PLUNGER
Q830, 833
2SD592A
PLUNGER DRIVE
D817, 823, 824, 826
OA90
D821, 822
SVDSR1K2
D818, 820, 827, 829
MA150
D915
MA1150
ZENER
Q820～824, 826
2SD636
TPS
Q825, 827
2SB641
DC AMP
D815
MA26A
D816
OA90
TPS CIRCUIT
P4
P3
REC/PLAY AMP & DOLBY NR CIRCUIT

note"

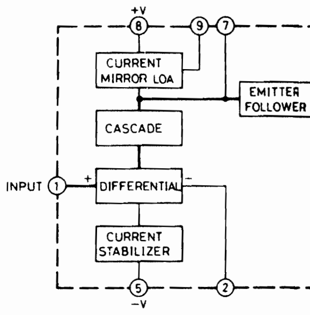
elec-
ndard.
pend-

s

13. Important safety notice:
Components identified by ⚠ make have special characteristics important for safety. When replacing any of thesse components, use only manufacturer's specified parts.

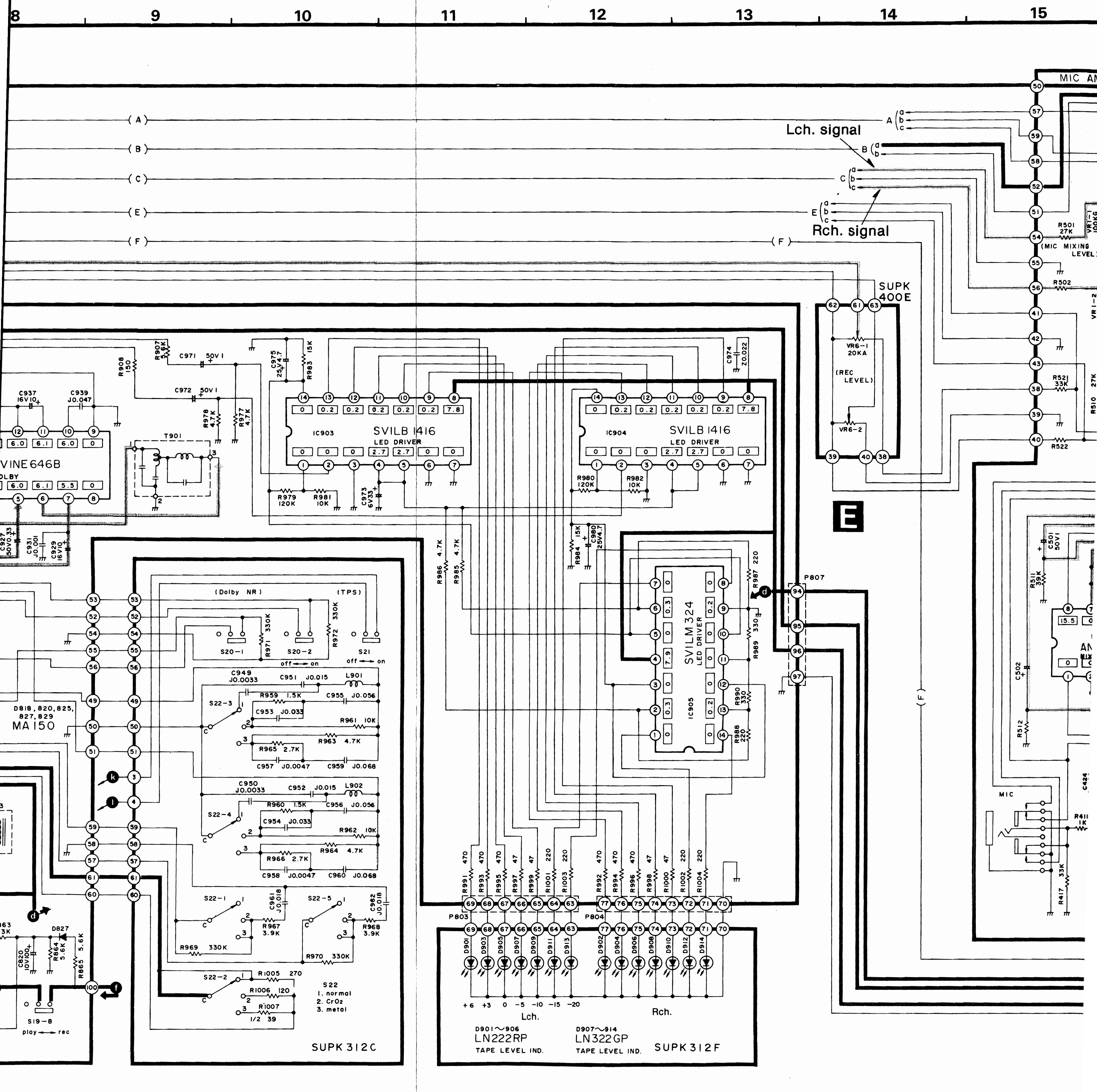
- **Block diagram of IC's (SCHEMATIC DIAGRAM Ⓑ)**

This is the basic diagram of the inside circuit of IC.
In an actual circuit, there may be sometimes idle terminals or some different functions other than the basic circuits.

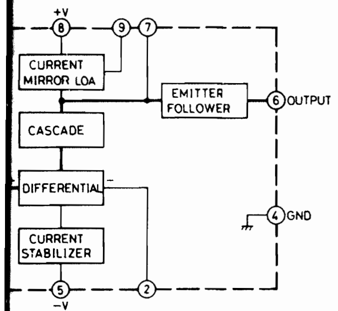


+V
8
9
7
CURRENT MIRROR LOA
EMITTER FOLLOWER
CASCADE
INPUT
1
DIFFERENTIAL
CURRENT STABILIZER
5
2
-V

IC601, 602
AN7060
INPUT

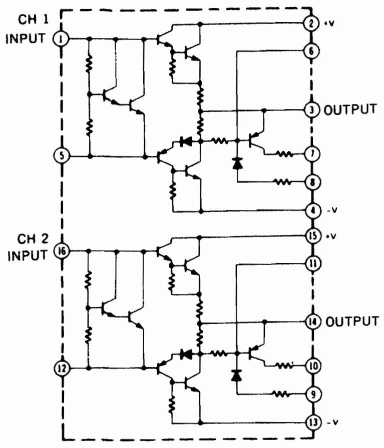


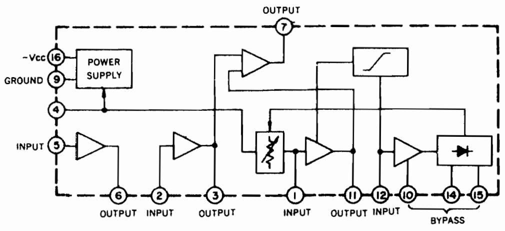
8
9
10
11
12
13
14
15
A
B
C
E
F
Lch. signal
Rch. signal
MIC AN
R501 27K
(MIC MIXING LEVEL)
R502
R521 33K
R510 27K
R522
SUPK 400E
VR6-1 20KA
(REC LEVEL)
VR6-2
E
VINE 646B
DOLBY
T901
C937 16V10
C939 J0.047
C971 50V1
C972 50V1
R907 5.6K
R908 150
R978 4.7K
R977 4.7K
C975 25V4.7
R983 15K
C974 Z0.022
IC903
SVILB 1416
LED DRIVER
IC904
SVILB 1416
LED DRIVER
R979 120K
R981 10K
C973 6V33
R980 120K
R982 10K
C927 50V0.33
C931 J0.001
C929 16V10
R986 4.7K
R985 4.7K
R984 15K
C980 25V4.7
SVILM 324
LED DRIVER
IC905
R987 220
R989 330
R990 330
R988 220
P807
(Dolby NR)
(TPS)
S20-1
S20-2
S21
R971 330K
R972 330K
off — on
C949 J0.0033
C951 J0.015
L901
C955 J0.056
R959 1.5K
S22-3
C953 J0.033
R961 10K
R963 4.7K
R965 2.7K
C957 J0.0047
C959 J0.068
C950 J0.0033
C952 J0.015
L902
R960 1.5K
C956 J0.056
S22-4
C954 J0.033
R962 10K
R964 4.7K
R966 2.7K
C958 J0.0047
C960 J0.068
S22-1
C961 J0.018
R967 3.9K
S22-5
C962 J0.018
R968 3.9K
R969 330K
R970 330K
S22-2
R1005 270
R1006 120
R1007 1/2 39
S22
1. normal
2. CrO2
3. metal
D818, 820, 825, 827, 829
MA150
R863 3K
D827
C820 10V100
R864 5.6K
R865 5.6K
S19-8
play — rec
SUPK 312C
R991 470
R993 470
R995 470
R997 47
R999 47
R1001 220
R1003 220
R992 470
R994 470
R996 470
R998 47
R1000 47
R1002 220
R1004 220
P803
P804
D901
D903
D905
D907
D909
D911
D913
D902
D904
D906
D908
D910
D912
D914
+6 +3 0 -5 -10 -15 -20
Lch.
Rch.
D901~906
LN222RP
TAPE LEVEL IND.
D907~914
LN322GP
TAPE LEVEL IND.
SUPK 312F
MIC
R411 1K
R417 33K
C424
R511 39K
C501 50V1
C502
R512
AN
15.5
(F)


+V
CURRENT MIRROR LOA
EMITTER FOLLOWER
OUTPUT
CASCADE
DIFFERENTIAL
GND
CURRENT STABILIZER
−V

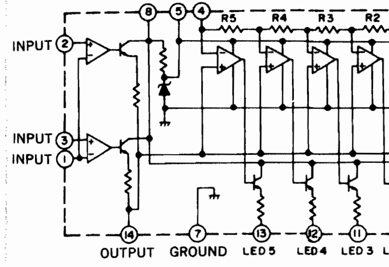
IC601, 602
AN7060
INPUT

IC603
SVISTK2028
POWER AMP

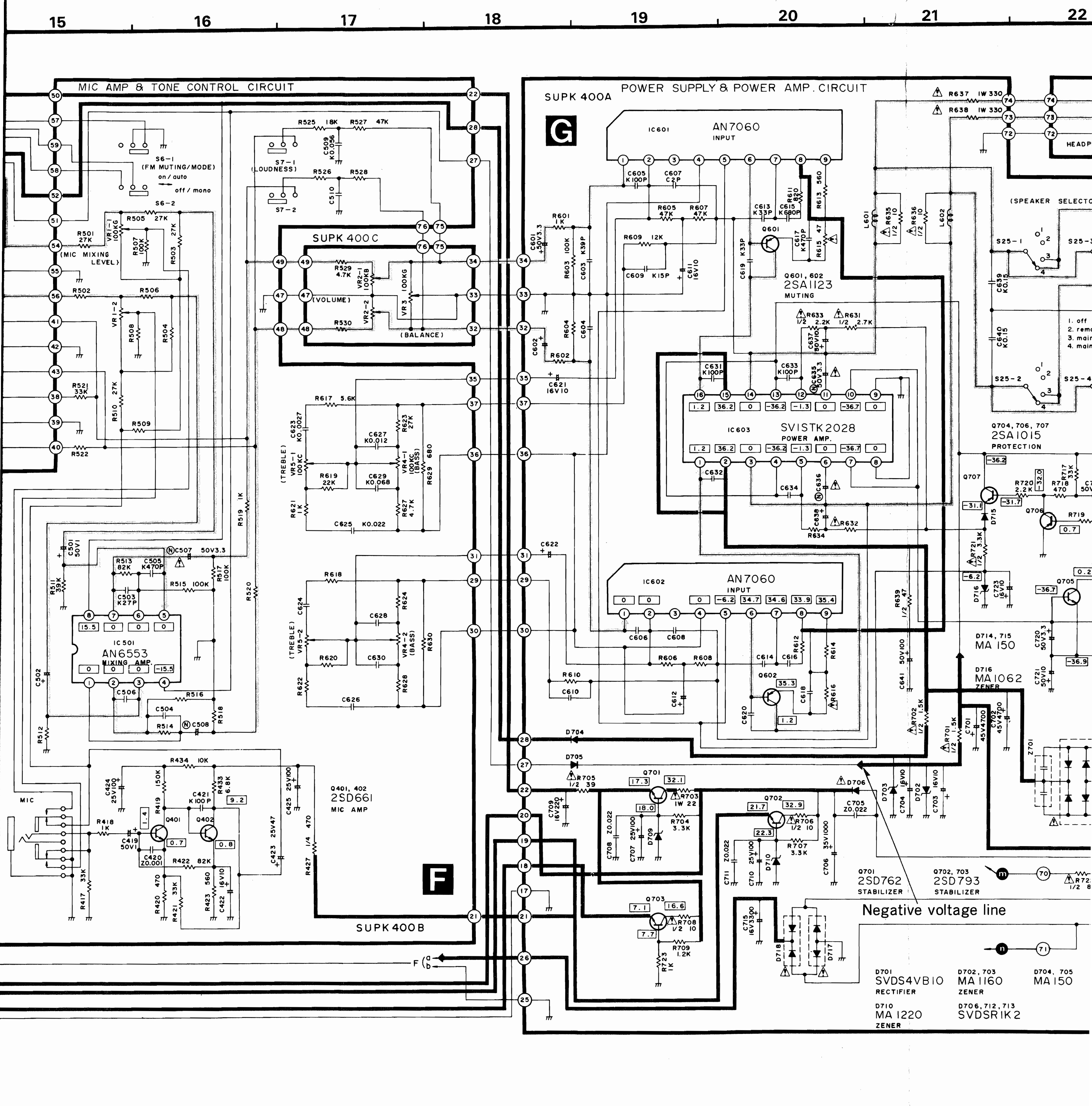

CH 1 INPUT
OUTPUT
CH 2 INPUT
OUTPUT
+V
−V

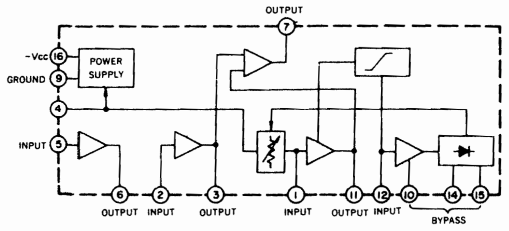

OUTPUT
−Vcc
GROUND
POWER SUPPLY
INPUT
OUTPUT
INPUT
OUTPUT
INPUT
OUTPUT
INPUT
BYPASS

IC901, 902
SVINE646B
DOLBY

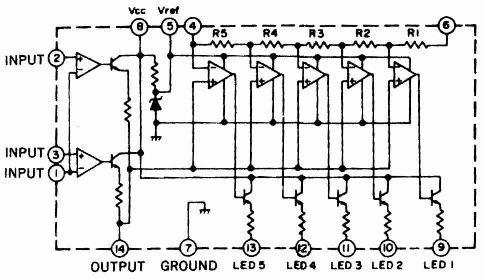

Vcc
Vref
INPUT
INPUT
INPUT
R5
R4
R3
R2
OUTPUT
GROUND
LED5
LED4
LED3

IC903, 904
SVILB1416
LED DRIVER

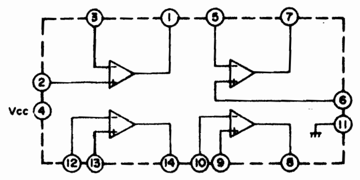

15
16
17
18
19
20
21
22
MIC AMP & TONE CONTROL CIRCUIT
S6-1 (FM MUTING/MODE) on/auto off/mono
S6-2
S7-1 (LOUDNESS)
S7-2
VR1-1 100KG
VR1-2
(MIC MIXING LEVEL)
SUPK 400C
(VOLUME)
(BALANCE)
(TREBLE) VR5-1 100KC
(BASS) VR4-1 100KC
(TREBLE) VR5-2
(BASS) VR4-2
IC 501 AN6553 MIXING AMP.
MIC
Q401, 402 2SD661 MIC AMP
SUPK 400B
F
F (a b
POWER SUPPLY & POWER AMP. CIRCUIT
SUPK 400A
G
IC601 AN7060 INPUT
IC602 AN7060 INPUT
Q601, 602 2SA1123 MUTING
IC603 SVISTK2028 POWER AMP.
(SPEAKER SELECTO
HEADP
1. off
2. remo
3. main
4. main
S25-1
S25-2
Q704, 706, 707 2SA1015 PROTECTION
D714, 715 MA 150
D716 MA1062 ZENER
Q701 2SD762 STABILIZER
Q702, 703 2SD793 STABILIZER
Negative voltage line
D701 SVDS4VB10 RECTIFIER
D702, 703 MA 1160 ZENER
D704, 705 MA 150
D710 MA 1220 ZENER
D706, 712, 713 SVDSR1K2
R637 1W 330
R638 1W 330


OUTPUT
-Vcc
POWER SUPPLY
GROUND
INPUT
OUTPUT
INPUT
OUTPUT
INPUT
OUTPUT
INPUT
BYPASS

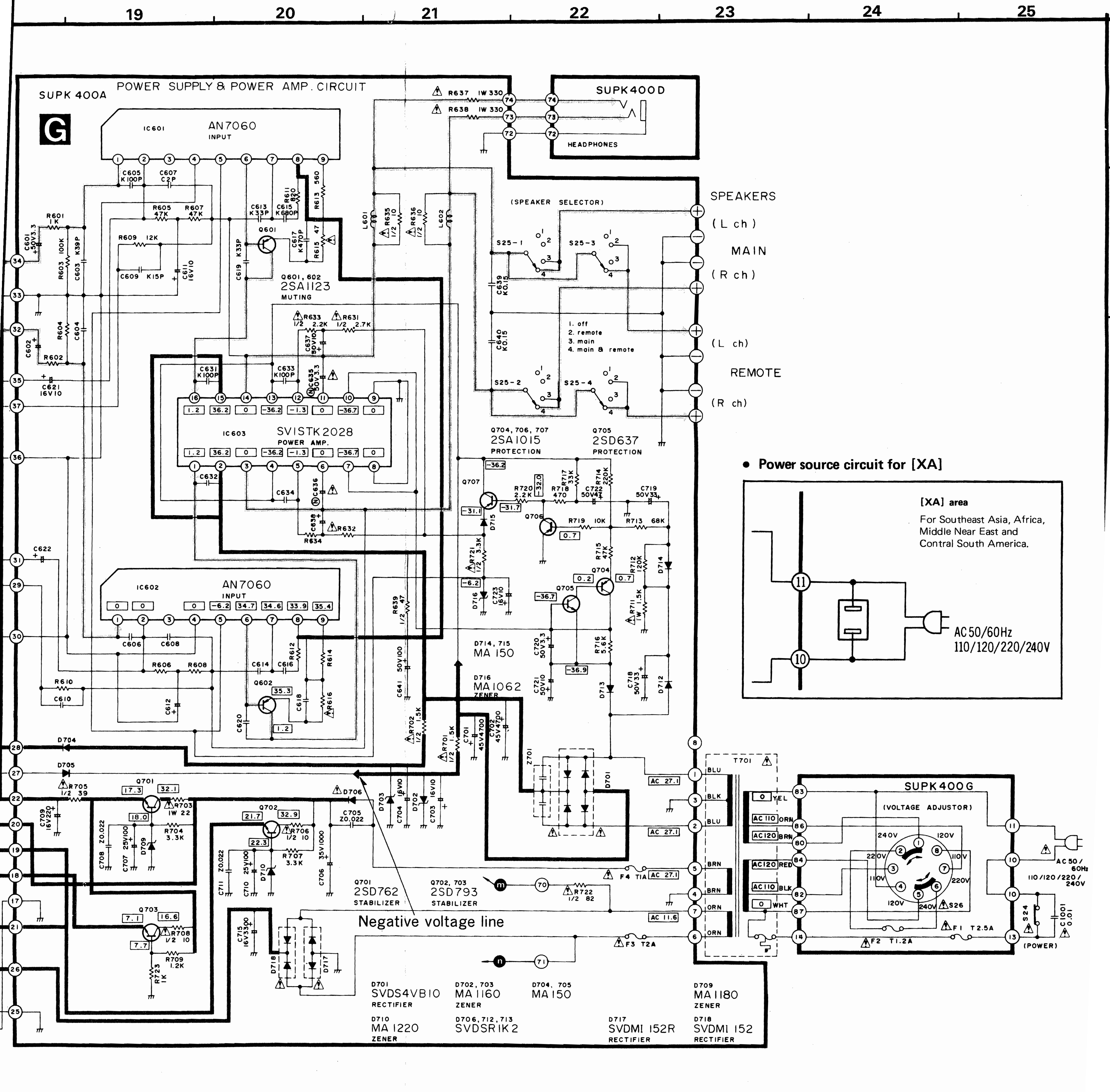
IC901, 902
SVINE646B
DOLBY


Vcc
Vref
R5
R4
R3
R2
R1
INPUT
INPUT
INPUT
OUTPUT
GROUND
LED5
LED4
LED3
LED2
LED1

IC903, 904
SVILB1416
LED DRIVER



IC905
SVILM324
LED DRIVER


19
20
21
22
23
24
25
SUPK400A
POWER SUPPLY & POWER AMP. CIRCUIT
G
IC601
AN7060
INPUT
SUPK400D
HEADPHONES
R637 1W 330
R638 1W 330
SPEAKERS
(L ch)
MAIN
(R ch)
(L ch)
REMOTE
(R ch)
(SPEAKER SELECTOR)
S25-1
S25-2
S25-3
S25-4
1. off
2. remote
3. main
4. main & remote
Q601, 602
2SA1123
MUTING
IC603
SVISTK2028
POWER AMP.
IC602
AN7060
INPUT
Q704, 706, 707
2SA1015
PROTECTION
Q705
2SD637
PROTECTION
D714, 715
MA150
D716
MA1062
ZENER
Q701
2SD762
STABILIZER
Q702, 703
2SD793
STABILIZER
Negative voltage line
T701
SUPK400G
(VOLTAGE ADJUSTOR)
AC 50/60Hz 110/120/220/240V
S24
(POWER)
S26
F1 T2.5A
F2 T1.2A
F3 T2A
F4 T1A
D701
SVDS4VB10
RECTIFIER
D702, 703
MA1160
ZENER
D704, 705
MA150
D709
MA1180
ZENER
D710
MA1220
ZENER
D706, 712, 713
SVDSR1K2
D717
SVDM1152R
RECTIFIER
D718
SVDM1152
RECTIFIER

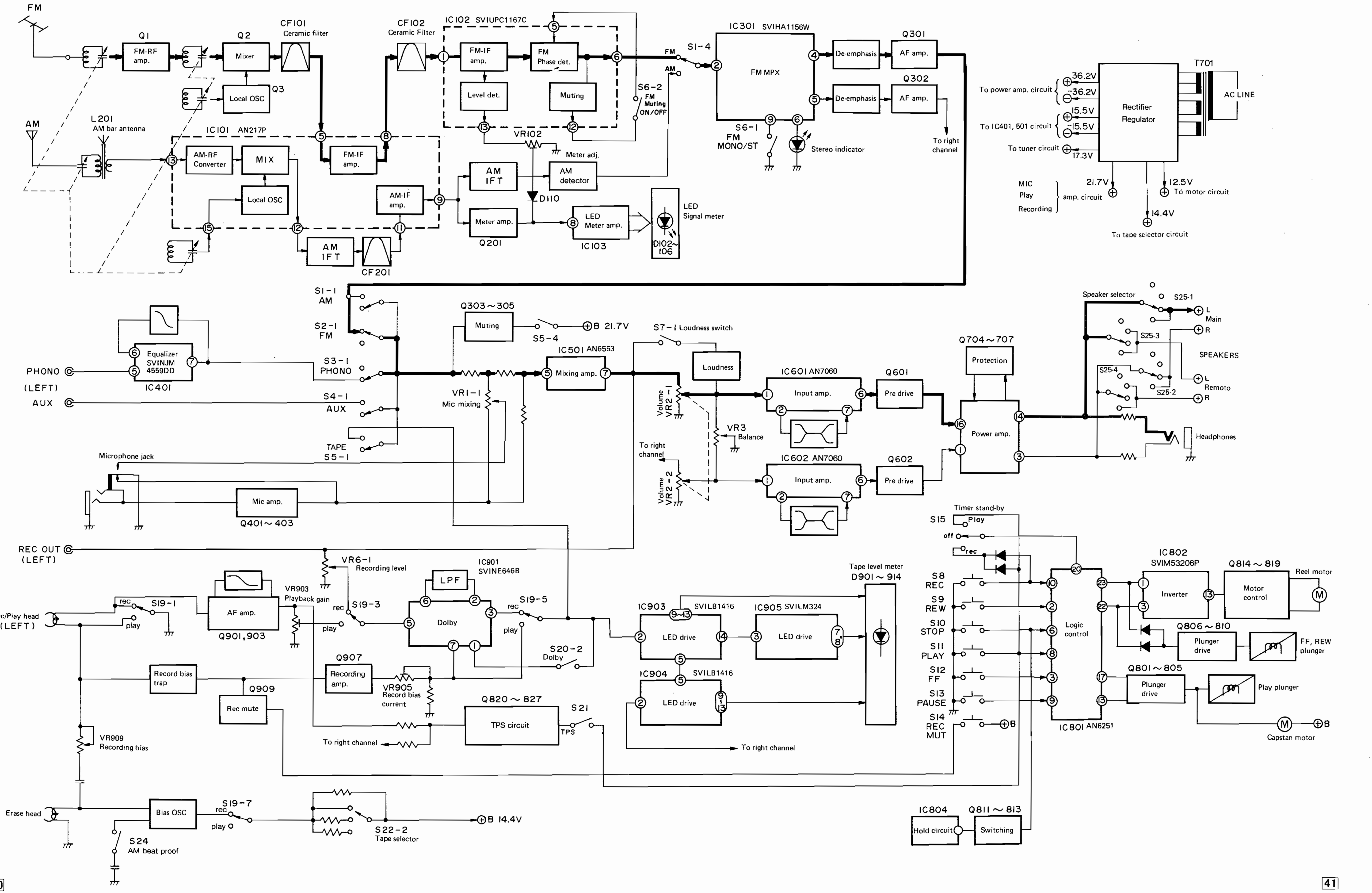
- **Power source circuit for [XA]**

[XA] area

For Southeast Asia, Africa, Middle Near East and Contral South America.

AC50/60Hz
110/120/220/240V

BLOCK DIAGRAM


FM
Q1
FM-RF amp.
Q2
Mixer
Local OSC
Q3
CF101
Ceramic filter
CF102
Ceramic Filter
IC102 SVIUPC1167C
FM-IF amp.
FM Phase det.
Level det.
Muting
IC301 SVIHA1156W
FM MPX
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S6-1
FM MONO/ST
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De-emphasis
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Q302
To right channel
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IC101 AN217P
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AM detector
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Meter amp.
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To power amp. circuit
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To tuner circuit
17.3V
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To motor circuit
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SVINE646B
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IC904
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S8 REC
S9 REW
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S12 FF
S13 PAUSE
S14 REC MUT
B
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IC802
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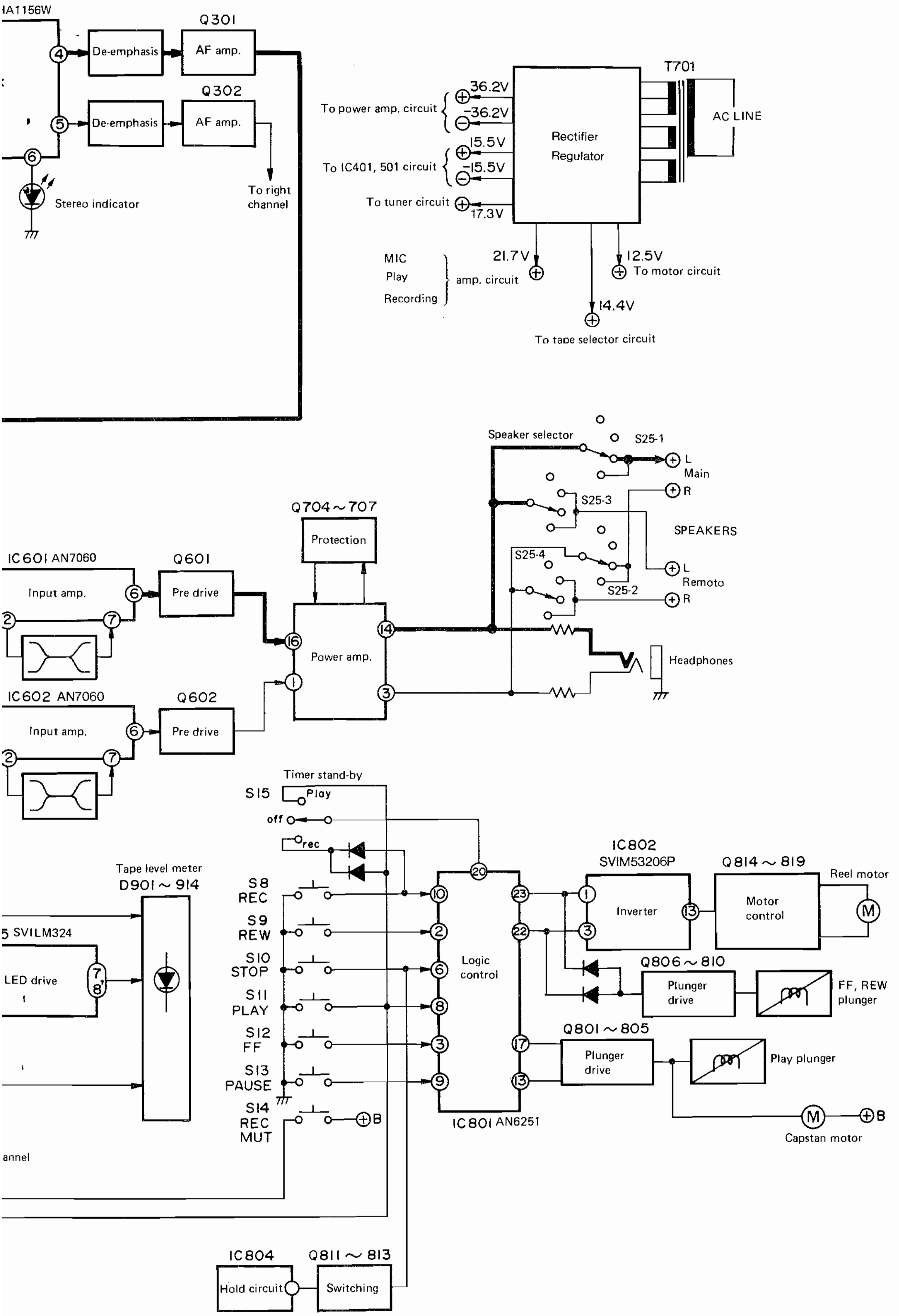
Q814~819
Motor control
Reel motor
Q806~810
Plunger drive
FF, REW plunger
Q801~805
Plunger drive
Play plunger
Capstan motor
IC804
Hold circuit
Q811~813
Switching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Q811～813
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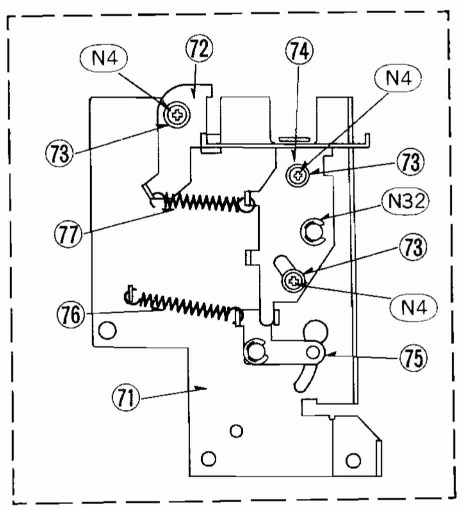
EXPLODED VIEWS... Cassette Tape Deck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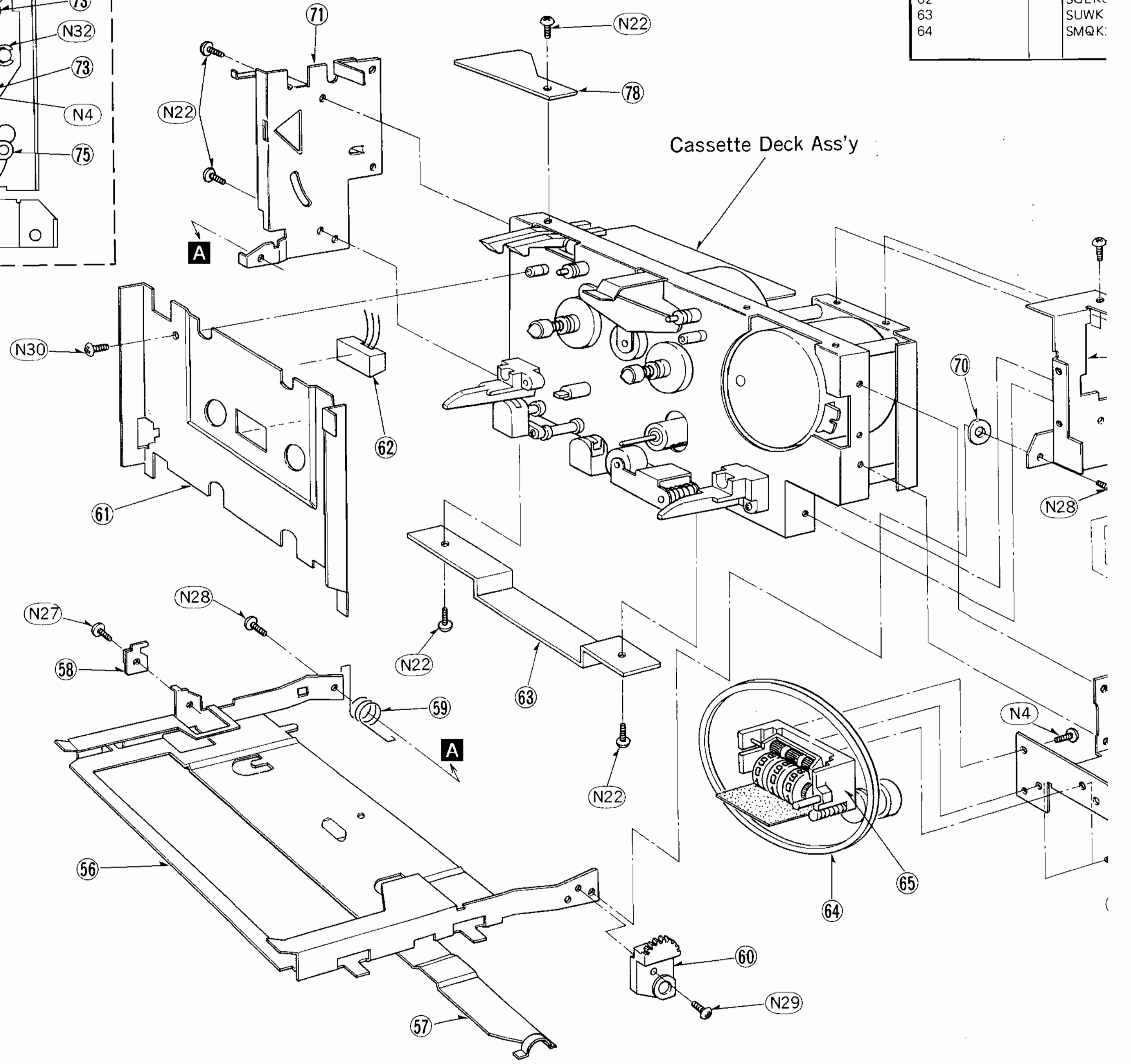
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■ REF

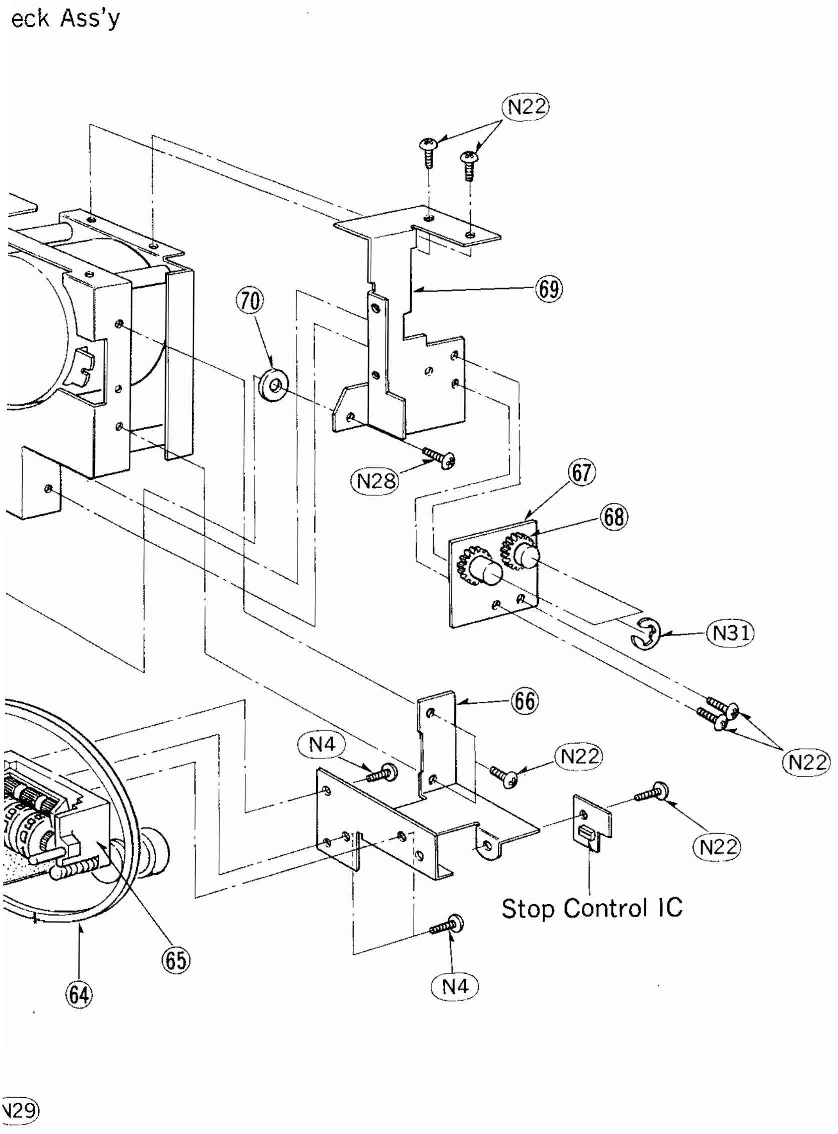
Notes:

Ref. No.		Pa
CASSETTE TAPE DECK		
55		SHR3
56		SGXK
57		SMQK
58		SMQK
59		SMQK
60		SMQK
61		SGXK
62		SGLK
63		SUWK
64		SMQK

■ REPLACEMENT PARTS LIST ...Cassette Tape Deck

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.

Ref. No.		Part No.	Part Name & Description
CASSETTE TAPE DECK			
55		SHR301	Lead Clamper
56		SGXK30	Cassette Deck Lid
57		SMQK6001	Spring, Cassette Lid
58		SMQK3008	Bracket, Cassette Lid
59		SMQK6002	Spring, Cassette Lid
60		SMQK4001	Gear, Cassette Lid
61		SGXK31	Mechanism Cover
62		SGLK3	Lamp, Cover
63		SUWK150	Bracket, Cassette Mechanical
64		SMQK2002	Counter Belt
65		SMQK2001	Tape Counter
66		SMQK3005	Bracket, Tape Counter
67		SMQK1003	Bracket Gear
68		SUE19	Dump Gear
69		SMQK1001	Bracket, Cassette Guide (R)
70		RDR13	Spacer, Cassette Lid
71		SMQK3002–1	Bracket, Cassette Guide (L)
72		SMQK3006	Bracket, Switch M'tg
73		SMQK5002	Sheft
74		SMQK3003	Bracket Eject
75		SMQK1002	Arm Eject
76		SMQK6003	Spring, Arm Eject
77		SMQK6004	Spring, Switch M'tg
78		SUWK160	Bracket, Cassette Mechanical
79		SMQT1005	Cassette, Guide (L)
80		SMQT1041	PL, Lever Ass'y
81		SMQT1007	Reel Ass'y
82		SMQT1009	B.T. Spring
83		SMQT1013	Brake, Arm Spring
84		SMQT1011	Brake, Arm Ass'y
85		SJH11	E, Head
86		SJH9	R/P Head
87		SMQ2086	Guide Coller
88		SMQ2082	Guide Roller (A)
89		SMQT1023	Head Panel Spring
90		SMQ2084	Guide Roller (B)
91		SMQT1045	RC, Lever
92		SMQT1025	Pinch Roller, Arm Ass'y
93		SMQT1003	Cassette, Guide (R)
94		SMQT1031	Flywheel Metal
95		SMQT1033	Thrust Pressure, Spring
96		SMQT1035	Thrust Pressure
97		SMQT1071	Drive, Unit Ass'y
98		SMQT1049	Main Motor Ass'y
99		SMQT1051	Motor Pulley
100		SMQT1053	Main Belt
101		SMQT1029	Flywheel Capstan
102		SMQT1037	F.L. Damper
103		SMQT1039	F.L. Hold Plate
104		SMQT1067	Panel Plunger Coil Ass'y
105		SMQT1069	Brake Plunger Coil Ass'y
106		SMQT1017	Plunger Shaft (L)
107		SMQT1047	Brake Pin
108		SMQT1061	Plunger
109		SMQT1065	Belt
110		SMQT1063	Azimuth Spring
SCREWS, CIRCLIP and WASHERS			
N33		**XUC15FT**	Circlip, ϕ1.5
N34		**XUC12FT**	Circlip, ϕ1.2
N35		**XUC2FT**	Circlip, ϕ2.0
N36		SMAT1059	Screw, Tapping ⊕ 3 x 3.5
N38		**XUC25FT**	Circlip, ϕ2.5
N39		SMQT1055	Nylon, Washer, ϕ2.5 x ϕ7 x 10.5
N40		SMQT1057	Nylon, Washer, ϕ2.5 x ϕ5 x 12.8
N41		**XSS26+5**	Screw + 2.6 x 5
N42		**XSN26+5**	Screw, Tapping ⊕ 2.6 x 5
N43		**XWC26B**	Washer, Spring, ϕ2.6
N44		XSN23+8FZ	Screw, Tapping ⊕ 2.3 x 8
N45		XSN23+12FZ	Screw, Tapping ⊕ 2.3 x 12
N46		XYN23+4	Screw ⊕ 2.3 x 4
N47		XYN23+5	Screw ⊕ 2.3 x 5
N48		XSS2+5FZ	Screw ⊕ 2 x 5
N49		**XSN2+5**	Screw, Tapping ⊕ 2 x 5
N50		**XSN2+6**	Screw, Tapping ⊕ 2 x 6
N51		**XSN2+14**	Screw, Tapping ⊕ 2 x 14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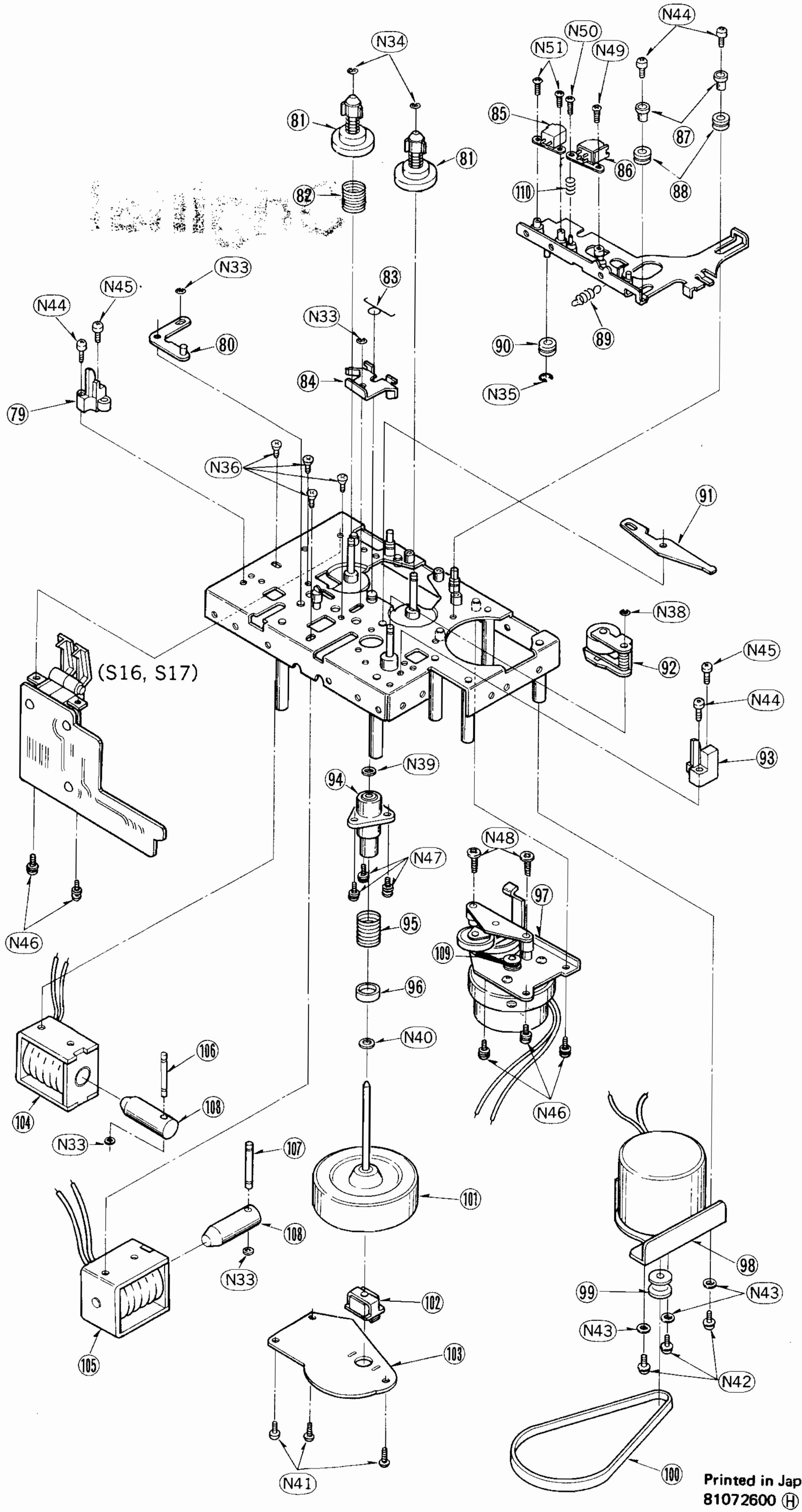
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Printed in Japan
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2066
ORDER NO. SD81072008C4

Service Manual

Original

FM/AM Stereo Cassette Receiver

SA-R30

[PA], [PE]

Areas

- * [PA] is available in for East PX.
- * [PE] is available in European Military.

Please use this manual together with the service manual for Model No. SA-R30/SA-R30 (K) Order No. SD81061929C8.

CHANGES

■ REPLACEMENT PARTS LIST

Ref. No.	Change of Part No.		Part Name & Description	Per Set (Pcs.)		Remarks
	SA-R30/SA-R30 (K) (ORDER NO. SD81061929C8) →	SA-R30 [PA, PE]				
CAPACITORS						
C308, 309	ECQM1H333KZ	**ECQM1H473JZ**	Polyester, 50V, 0.047μF, ± 5%	2		ARD
CABINET and CHASSIS PARTS						
1	SGUAR30N SGUAR30KN	SGUAR30N	Cassette Lid	1		
10	SYWK100 SYWK120	SYWK100	Panel, Front Ass'y	1		
17	SGXK32 SGXK32–1	SGXK32	Cassette Bottom Board	1		
19	SHRK911 SHRK911–1	SHRK911	Timer, Switch Cover	1		
40	SKCK50S1 SKCK50B1	SKCK50S1	Cabinet	1		
49	SGPK90–2A SGPK90–3A	SGPAR30P	Rear Panel	1		
50	SJA88 SJA111	**RJA52Z**	AC Cord	1		RD
SCREW, NUT and WASHERS						
N18	XTB4+8BFN XTB4+8BFZ	**XTB4+8BFN**	Screw, Tapping, ⊕ 4 x 8	4		WDD
N19	XTB3+8BFN XTB3+8BFZ	**XTB3+8BFN**	Screw, Tapping, ⊕ 3 x 8	5		WDD
ACCESSORIES						
A2	SJP5213–1 SJP5215	RJP120ZBS	Plug Adaptor, Power Source	1		
A3	SPB1065	Deletion	....	0		
PACKING PARTS						
P1	SPGK69 SPGK74	SPGK69	Carton Box	1		
P6	SGK1413	Deletion	....	0		
P7	SQFK5035 SQFK5036	SQFK5037	Instructions Book, Printed Matter	1		

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